THE BRITISH EMPIRE

BBC tv TIME-LIFE BOOKS 25p
98 Weekly parts No. 28

THE BUSINESS OF EMPIRE

British Trade Spans the Seas

Australia & New Zealand 70c South Africa 70c Canada 95c

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BY THE WAY

The first "By The Way" column made a light-hearted reference to two tiny islands that we had been unable to trace, Roast Beef and Plum Pudding. We asked if anyone could pinpoint them for us. To our amazement, several people could: they are, it seems, just off the coast of South-West Africa. Mr. S. R. Fenn of Hadley Wood, Middlesex, writes: "They, and the coastal settlement of Walfish Bay, further north were used as bases for whale fishermen. Walfish Bay came under British control in 1878, and I presume the islands did at the same time." And Mrs. Stella Saunders, of Malvern Link, Worcs., includes the information that the two islands are near a cape called Panther Head and are referred to in a book of that name by Lawrence Green.

A good point has been raised by a London teacher, Barrie Reader, who objected to our use of a small initial letter in the spelling of "negro," contrasting for instance with our use of a capital for "Caucasian." This is, indeed, an inconsistency and we now spell "Negro" with a capital.

Our first spelling derived from the feeling that "Negro" was used nowadays to mean "black." As Mr. Reader implies: so what? "Caucasian" often means "white." Besides, in the context of imperial history, "black" also included Indians: "Negro" thus clearly relates to a geographical area (Africa), and deserves its capital.

There have been a few objections to the crudity of some of our illustrations, particularly those relating to the Hastings trial in Number 12. It should be said that as far as the public expression of political sentiments were concerned, the 18th Century far outdid our own in virulence and crudity. Though we avoided the most extreme forms of this, to ignore it altogether would be a distortion of known fact – and then there would be cause for really strong complaint.

All letters please to: **The British Empire, 76, Oxford Street, London W.1.**

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Cover: Tugs help the brand-new steamship, the *Great Eastern*, as she moves down the Thames on her way to the Channel, where she undertook the first trials of her engines.

THE BUSINESS OF EMPIRE

Throughout the 19th Century, British industrialists, bankers and investors spun a web of trade that poured the fruits of the Industrial Revolution into the remotest corners of the globe, brought raw materials from all over the world flooding into London, and transformed a square mile of the capital into the ruling financial headquarters of the world.

By Stuart Legg

The fantastic growth of British trade in the 19th Century is, by and large, a sober chronicle of the efforts of careful businessmen to increase their fortunes by exploiting the new techniques then coming into use in industry and commerce. Risks were accepted, if the possibility of profit was great enough, but the leading merchants and manufacturers and financiers of this era were rarely romantic where their money was at stake.

There was, however, one glorious and relatively short-lived exception to this sensible approach – the tea trade with China in the years when this highly valuable cargo was carried halfway round the world in the now-legendary clipper ships.

In the 1860s, the Pagoda Anchorage at Foochow, China was a renowned place. For it was from here, near the southern tip of Lo-sing Island, that the annual tea-races from China to England started.

The teas of China were both valuable and perishable. If kept too long at sea, they lost the subtlety of their fragrance. So the first shipments of each season's crop to reach the London Docks invariably fetched the highest prices. The faster ships of the tea fleet commanded a freight rate of up to £7 a ton, and for the vessel which outpaced her rivals an additional premium was waiting. Big money was at stake, too, in betting on the winner; for the races had become a sporting as well as a commercial event. Bewhiskered wagerers in West End clubs engaged in furious arguments on the merits of hulls, rigs and canvas: office-boys in the City gave each other black eyes. And it was taken for granted that the only ships that stood a chance of a place were those known as "clippers."

The clippers were the fastest and loveliest sailing-ships the world ever saw. They were loosely described as "any sort of square-rigger that carries just as much sail as the traffic will bear, including the captain's shirt." Their design had originated in the genius of American shipbuilders. They could trace their ancestry back to the nimble 18th-Century pilot-boats of Chesapeake Bay, and the ranging privateers of the War of 1812.

By the 1840s there was room – and demand – on all the seas for ships which combined extreme speed with adequate carrying capacity. The tea trade from the Orient was growing. The gold-rushes in California and Australia had sent sea-sick hopefuls scurrying by the thousand across stormy seas. Irish emigrants were clamouring for passages to New York. Wherever there were passengers or light, high-value cargoes to be moved, ships of the clipper type – with their long fine hulls, concave bows, clean-run sterns, and their huge spread of sail – were among the most profitable vessels afloat.

Using softwood hulls, the Americans evolved ever-larger ships with towering masts and tremendous spars. From America, in 1845, came *Rainbow*, first of the true Yankee Clippers. So hollow did her lines appear, that old salts, gathered around the cracker-barrel, swore that she looked as though she was constructed inside out; they were convinced she could never survive a real sea. Then came *Oriental*, making the London Docks only 97 days after leaving Canton – the first ship under the Stars and Stripes to land a cargo of prime tea in England. In that one voyage she netted a freight which covered three-quarters of her cost.

American clippers were capturing Britain's tea trade. But for the British worse was to follow, for Donald McKay of East Boston, Massachusetts, greatest of the clipper-designers, was entering the lists. From 1850 on he produced a series of speeding monsters of 2,000 tons or more: *Lightning*, *Champion of the Seas*, *James Braine*, and – as her owners gratefully called her – the *Donald McKay*. These were the only sailing-ships ever to run 400 sea miles in 24 hours – distances not to be achieved until the advent of modern liners. Down the American ways went *Flying Cloud*, *Witch of the Wave*, *Winged Racer*, *Tornado*, *Romance of the Seas*: glorious ships with glorious names, slamming round Cape Horn to the Golden Gate and surging across to Melbourne via the Cape of Good Hope – "running their eastings down" as it was called.

The British, building with hardwood – oak and teak – concentrated on smaller lighter craft. As the building race developed, Aberdeen vied with the Clyde, Liverpool with the Thames, to win back the laurels for Britain. From English and Scottish yards came *Sir Lancelot*, *Titania*, *Forward Ho*, and later *Cutty Sark*, *Leander*, *Thermopylae*, *Black Prince*.

The clipper captains were as celebrated as champion jockeys. The American masters were usually men of education and social standing. Their British rivals, by contrast, were a rougher-hewn lot. There was the brawny, fiery Dick Robinson from Cumberland; and "Bully" Forbes, who once sailed *Marco Polo* into Liverpool bearing on a huge pennant the instantly disputed statement that she was "The fastest ship in the world."

There was an illustrious roster of Scots captains, for many of the finest ships came from Aberdeen: Maxton, a "very skeely skipper," Mackinnon, Innes. Then there was the wryly humorous Keay, wise in the ways of the dreaded typhoons of the China Seas, his eyes networked with crow's feet.

Such men milked the wind. When more prudent captains shortened sail, they piled it on into the teeth of a rising gale. They strained canvas and cordage to breaking-point. Total wrecks were not infrequent. But most of the chances they took paid off. Speed was money.

Then, for the Americans, came crushing misfortune in the form of the financial depression of the late 1850s, followed by the Civil War. After that, the British virtually had the seas to themselves. And the greatest prize that returned to them was dominance of the China tea trade.

In the late spring of 1866 some 16 of

Gordon

Figureheads, like the ones on these pages, enchanted Victorian captains. The skilfully carved busts tucked under the bowsprit were more than a traditional form of decoration. They often reflected an owner's loyalties and political allegiances, and provided his vessel with a highly personal identity mark, instantly recognizable at sea and ashore.

Disraeli

the most famous of the British clippers lay at the Pagoda Anchorage taking on their tea. *Ariel*'s cargo was completed first. Her captain was Keay, and his cabin was piled so high with tea-chests that he had to sleep on the chart-room settee throughout the voyage. He got his ship away on May 28, but that night he had trouble crossing the Foochow harbour bar, and had to let go his anchor again. Next morning he saw to his dismay that *Taeping*, as well as *Fiery Cross* and *Serica*, were all at sea ahead of him.

Between the pirate-infested islands of the South China Sea with its erratic currents, treacherous rocks and scarcely charted shoals, through the misty rainfall and tumbling waves of the monsoon, the four clippers raced westward across the world. At Mauritius in the Indian Ocean *Fiery Cross* and *Ariel* were in the lead, *Taeping* was lying 12 hours astern, and *Serica* a long three days behind. Rounding the Cape and heading into the Atlantic, *Ariel* and *Taeping* drew level with *Fiery Cross*; and by St. Helena *Serica*, lucky with her winds, was closing up.

Though out of sight of each other, the three leading ships crossed the Equator almost simultaneously. Then came more trouble – this time for *Fiery Cross*: the north-east trades were poor that year, and she was becalmed for a crucial 24 hours. At the Cape Verde Islands *Ariel* was ahead, with the others bunched up a day behind her.

But now the uncertain weather gave way to fresh westerly breezes. Each captain "cracked on the dimity," supplementing every stitch of canvas he could send aloft with strange unorthodox sails – ringtails, save-alls, Jamie Greens, moonsails, watersails – thought up by himself or his colleagues. Pounding into the approaches to the Channel, *Ariel* sighted the Bishop Light on the reefs of the Scillies in the small hours of September 5. But dawn broke to reveal a ship on her starboard quarter. It was Mackinnon, in *Taeping*. By noon both ships were hoisting their identification numbers for the benefit of watchers on Start Point, Devon. At midnight Beachy Head was abeam, and still the two surged on neck and neck. At Deal, within a few cables' lengths of each other, they signalled for their tugs. All the way round the North Foreland and into the Thames the battle continued, the stokers on the tugs sweating at their shovels, the water churning below the straining hawsers. At 9 p.m. that evening *Ariel* was outside the gates of the East India Dock, and it seemed a foregone conclusion that she had won. But *Taeping*, hot on her heels, drew less water. On the rising tide she was able to get through the lock-gates first – and she docked just 20 minutes before *Ariel*. An hour later *Serica*, lying third was berthed. It had taken 99 days for all three ships to cover some 14,000 miles.

Such feats of seamanship were common among the clippers in their heyday. With gunwales awash, making 18 knots or more, they were driven, canvas tearing, stunsail booms snapping, to the limit of the stresses their hulls could stand. To achieve such performances, the well-paid, superbly fit young crew-men might be sent reeling into the scuppers by the captain's boot, laid on their backs for weeks by the mate's belaying-pin, ordered to the masthead for "malingering" in weather that made such punishment tantamount to a death sentence, for any misstep during the climb could cause mortal injury.

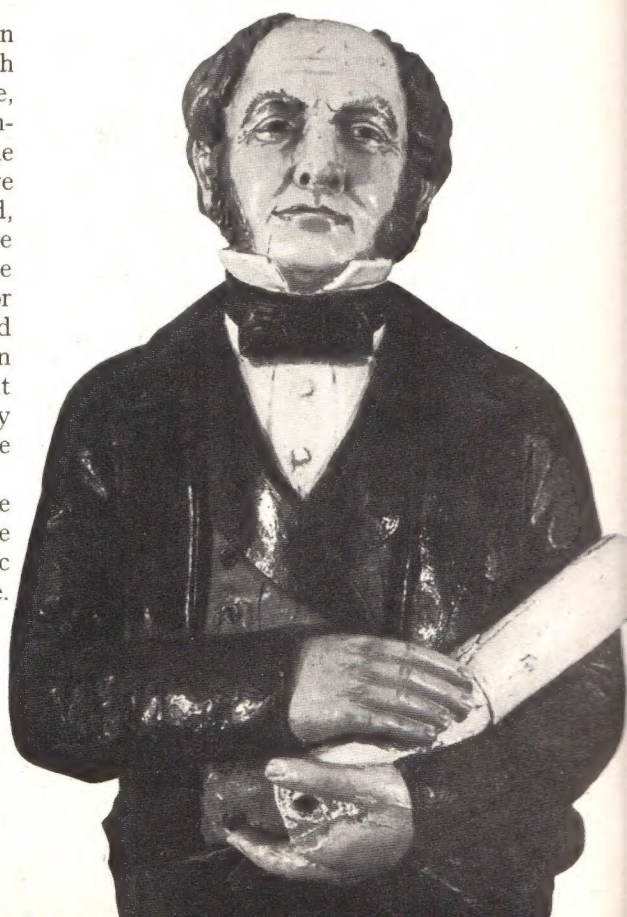
These wooden ships, flayed through the seas by the iron men who made up the crews, stood for a supremely romantic moment in the saga of British ocean trade.

But it was a short-lived moment, for the clippers and their kind were fighting for survival. In the long run their builders and owners, Yankee and Limey alike, had backed a losing horse. The steamship, with her grimy smokestacks, was slowly but remorselessly pushing the clippers from the seas.

In a wider sense, as well, the majestic square-rigged greyhounds of the 1860s symbolized an older order. They were vestiges of the era of Soil and Sail from which the British Empire had sprung. For it was the Soil at home that had provided the country gentlemen, the yeomen, the artisans, who had gone as governors and settlers to America, as merchants and soldiers to India. And it was the Sail at sea that had fought off rival imperial powers, and borne the first peaceable traffic between the motherland and the colonies.

But as that empire grew through the 19th Century into the vast mosaic of Victoria's realms, another empire grew up beside it. This empire had its roots in the onset of technical innovation and large-scale industry. Transforming the soil of the homeland, eventually sweeping sail from the seas, it mushroomed into a parallel edifice which can be called the British Empire of Trade and Capital. For many years the two empires – the Queen's Empire of fleets and armies, proconsuls and officials, and the Other Empire ruled

Gladstone



by the rising power of manufacturers, bankers, investors – were largely independent of each other. And though towards the close of the 19th Century their spheres of interest increasingly merged, they never completely coincided.

An empire of imperial trade had existed in embryo since the days of the first British overseas possessions. The colonies sent home whatever their pioneers produced. Canada supplied British shipyards with masts from her splendid pine forests and furs from her northern wilds for the well-to-do. Sugar and tobacco from the West Indies and America flooded into Britain and light, comfortable Indian cottons began to displace cruder homespuns. Tea, coffee, chocolate, soon appeared on English tables.

In exchange, British farmers supplemented the colonial diet and cottage-based spinners and weavers sent clothing and fabrics. Scotland dispatched her pots and pans and linens, Manchester her fustians. And for Britain the trading balance was augmented by revenues from India: the spoils of conquest and annexation, the interest on loans floated in Calcutta, the profits brought home from the East by retired merchants.

Lest the national interest be endangered, however, all British trade was fenced about with a host of restrictions. To keep imports within bounds, duties – many of them prohibitive – were levied against nearly 1,000 articles and commodities, and the export of materials considered vital to Britain's livelihood or security was virtually forbidden. At the same time the Navigation Laws, dating back to medieval times and reinforced by Oliver Cromwell in the 17th Century, still laid down that, by and large, British trade be carried in British ships.

The restrictions buttressed a system managed by a ruling landed aristocracy more concerned with political stability in Britain than with economic opportunity. British trade beyond Europe gained little ground during this era.

Yet beneath the placid surface of the Georgian Golden Age of the 18th Century, forces of profound change were gathering momentum. Population was increasing. Interest in science was spreading. It was clear that below the broad acres of farm and park lay thick seams of coal, rich deposits of iron-ore. And Adam Smith, in *The Wealth of Nations*, published in 1776, launched the first serious attack on trade restriction, urging instead the benefits of exchange based on specialization.

All these stirrings were brought together by men of technical genius. By the Darbys and Cort, applying coal to the smelting of iron. By Thomas Newcomen, James Watt and John Wilkinson developing the steam engine. By George Stephenson and Henry Bell, setting the engine on rails and in the hull of a boat. By Richard Arkwright and Samuel Crompton introducing machines to spin cotton. By Matthew Boulton, Robert Owen and Josiah Wedgwood, with their gift for organizing technology into business. They and their associates not only released productive power on an unheard-of-scale, but spread a new attitude to its proceeds.

For the most part, ironmasters, enginewrights, inventors and proprietors were men of humble urban origin – the antithesis of the landed gentry with their comfortable inherited rent-rolls. Self-made, thrifty, they knew the creative value of money and were well aware of the vital importance of ploughing back profits, thus amassing capital to perpetuate and expand the cycle of production and distribution.

Two industries in particular – the manufacture of cotton and woollen clothing – leaped ahead as a result of the new productivity. And their demands for raw materials quickly affected the old patterns of overseas trade. By 1810 the hand-spinners of cotton, who had drawn most of their supplies from the eastern Mediterranean, were extinct: the new Lancashire mills were importing growing quantities of cheaper, better-quality cotton from the slave-plantations of the American South. And Yorkshire, previously working with wool from flocks in Spain, Saxony, Silesia and England, was turning to a source within the Empire.

In 1790 John Macarthur had gone to Australia as a lieutenant in the New South Wales Corps. From his farm at Rose Hill, near Sydney, he had started to breed sheep experimentally, basing his flock on five pure Merino rams purchased from the royal stud at Kew. A brief period of exile resulting from a blazing row with Governor Bligh, that choleric ex-naval officer of *Bounty* fame, did not deter him. Soon Macarthur was declaring that beyond the Blue Mountains "lay tracts of land adapted for pasture so boundless that no limit can be set to the fine-woolled sheep which can be raised."

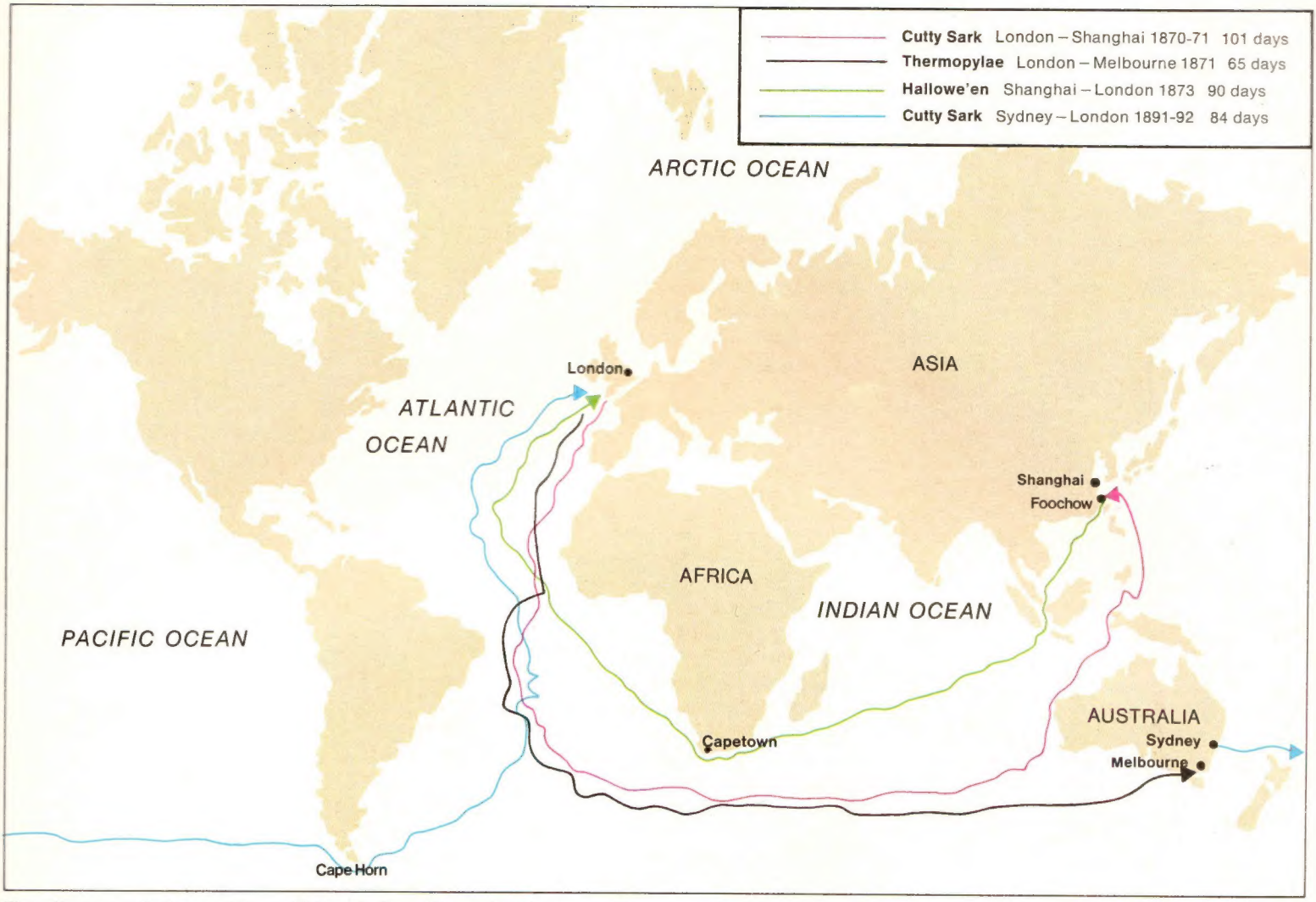
Their imagination fired, free settlers and ex-convicts began their surge inland, buying up every head of sheep they could afford. Wool imports from Australia rose with extraordinary rapidity.

The main encouragement for the burgeoning British economy came from Napoleon. For the great wars with France at the turn of the century created demand for every kind of manufacture, while at the same time they conveniently disabled European competition. And as a result of Britain's role as purveyor to the armies of her allies, wartime dealings vastly increased the experience of British merchants in international trade. Mexican dollars arriving in London from the sale of calico in Spain might have to be changed into other currencies to meet military pay-rolls falling due in Flanders. Uniforms from Bradford, sabres and muskets from Birmingham, saddlery from Norwich, horses from Ireland, might all have to be assembled and delivered to Trieste for a campaign in Austria. Only British firms had the chance to master such intricate operations, and to make them matters of everyday routine.

Equally valuable, the struggle against Napoleon increased the quantity of capital in Britain available for investment. That capital, in any case, was accumulating rapidly from industrial expansion at home. And the banking system of deposits, of loans, of notes and credit to speed and multiply money, was getting into its headlong stride.

The French Wars brought in refugee funds as well. Led by the wealthy financiers of Amsterdam, bankers from all over Europe, eager to find safer outlets for their capital through London, transferred great sums to Britain, and with these funds at hand, with profits and savings accruing beyond the needs of home industry, the search began for fields abroad where the surpluses could be rewardingly invested.

In the early 1820s, those first years of peace the 19th Century knew, very little of the world understood the rules of capitalism. In the eyes of the London



Tea clippers sailed to and from China via Cape Town, but for wool clippers on the Australia run the shortest way home was round Cape Horn.

money-market the British Empire certainly did not: it was seen as a collection either of sparsely populated white colonies or of primitive native territories. Only Europe and the Americas offered responsible and hopeful fields for investment. "The confidence of capitalists flies by the law of its nature from barbarism and anarchy to follow civilisation and order." Thus, somewhat pompously, spoke the historian Thomas Babington Macaulay: but as a rough yardstick it was true. So the first major outward movement of British capital took its course across the Channel and the Atlantic.

Loans from London underpinned the reconstruction of Europe. The peerage conferred on Nathan Rothschild for his prominence in floating them set his merchant-banking house on the road to power. And a smaller City firm headed by Alexander Baring, "a heavy-looking young man with a hesitant manner," quickly rose to fame in lending to the Continent. There were now, it was whispered, six great powers in Europe: Britain, France, Russia, Austria, Prussia – and the Baring Brothers.

At the same time an institution which had evolved from Jonathan's Coffee House in London's Change Alley, and was now known as the "Stock Exchange," began to display a lively interest in Latin America. Here was a group of young countries manfully throwing off the yoke of Spain and Portugal: to help them on their way would combine British ideals of freedom with the prospect of future trade. And such was the rush to finance Chile, Colombia, Peru, Brazil, that when a joking broker proposed an issue for the non-existent "Republic of Poyais on the Mosquito Coast" it was heavily oversubscribed by eager investors.

Much more important was the first quiet interest shown by far-sighted investors at this time in the young United States, where canals were driving inland from the Atlantic seaports and cotton-planters were extending their fields towards the Gulf of Mexico.

This first wave of British overseas investment came largely from the big men of the City, for the small investor had scarcely yet appeared. Much of the investment, especially the loans to Latin America, turned out badly. But it raised London's eyes permanently to the world scene. It increased foreign purchasing power, and so created new markets for

British goods. It advertised, to all nations eager for progress, Britain's new role as trader-money-lender. And it did next to nothing for the British Empire.

To the leaders of the growing empire of trade, the Empire of the Union Jack still meant little. Indeed, many businessmen actively disliked the whole imperial idea. They saw the British possessions merely as costly liabilities; and to judge from the experience with the American colonies, transitory liabilities at that. Their sights were set on the wide world; and for this reason they found increasingly irksome the old labyrinth of restrictions that still strait-jacketed the movement of goods. Did the well being of powerful progressive Britain really hinge on continuing the ancient rules that severely limited the import of bulrushes, canaries, fossils and manna? Was it rational to retain long lists of dutiable articles when only 17 of them produced nine-tenths of the entire Customs revenue? And the Corn Laws, enacted in 1815 at the instance of the landowners to exclude cheap foreign cereals, were anathema to industrialists: to them cheap food meant cheap labour.

Year by year Manchester, with its ever-swelling export of cotton goods, was growing more influential. Its foremost men – wealthy spinners like the tireless James Turner, the acid-tongued Hugh Mason, the fox-hunting Quaker Edmund Ashworth – were increasingly influential. Britain, they argued, now had nothing to fear from foreign competition. Let her sell to all, buy from all, as market opportunity dictated. Let her take the lead in freeing trade; and others, with needs to satisfy and produce to offer, would follow suit.

"Free Trade," Cobden proclaimed, "is God's diplomacy." Free Trade was based on the concept of non-interference or *laissez-faire* (literally, "let-do," i.e. "let people do as *they like*"). This, it was thought, was the only certain way of binding the nations together in peace. Ensure that other peoples, be they subjects of the Queen or not, could earn the wherewithal to buy from Britain – and then British merchandise "carrying the seeds of intelligence" abroad, would be able to perform its high task of civilizing and uplifting.

At Westminster, Free Trade found a less idealistic but very practical champion in Lord Palmerston, Foreign Secretary in the 1830s. Aware that some nations might not immediately perceive its advantages, he declared it was government's duty "to open and secure the roads for the merchant" – if the occasion demanded, with the help of the guns of the Royal Navy.

One such nation was China. The Chinese had always strictly controlled their trade with the outside world. British merchants and their Western colleagues were permitted to trade only at Canton. Even there, no stranger was allowed ashore unescorted.

Moreover, though the demand for teas and silks in England was high and growing, the Chinese would admit few British products in exchange. The one commodity they were prepared to accept without limit was silver; and the readiest way for the British merchants to obtain silver was through the illegal sale, in China, of opium. So expertly was this trade organized that it grew to be three times as valuable as the legal trade.

With their coasts under daily assault from small fast opium clippers, the Chinese government became alarmed at the toll the drug was taking. The British trading community maintained that it was the rigid controls which had compelled them to resort to a prohibited traffic. The show-down came in 1839 when Peking demanded the surrender of all opium secretly stored at Canton, and prepared to enforce its demands by cutting off supplies of food and water to British shipping in the harbour.

The follow-up took the form of sharp, decisive naval action by British men-of-war and a landing by 4,000 British troops from India. The Chinese, as had been foreseen, at once gave in. By the Treaty of Nanking in 1842 Hong Kong was ceded to Britain to become the great clearing-house of British Pacific trade, and five ports along the coast were opened to foreign commerce. The other Empire had forced the gates of China.

In England the Free Trade movement was becoming irresistible. Progressively the Customs lists shortened, the duties on industry's staple materials shrank. The Great Hunger caused by the Irish potato famine of 1845 sounded the knell of the Corn Laws. Four years later the Navigation Acts disappeared. The biggest customer on earth had thrown open her markets to the world: and the world, selling to Britain, catalysed by London's overseas investments, rushed to order a wide variety of British goods.

Around the damp foggy sprawl of Manchester the cotton towns of Lancashire moved to specialization as their production escalated: Bolton, Chorley, Preston concentrating on the finer cloths; Oldham on mediums; Burnley on ordinary printings; Blackburn on *dhotis* – long, universally worn loin-cloths – for the Indian trade. Neighbouring Yorkshire spewed forth the woollens and worsteds of Bradford, Huddersfield, Barnsley. Now producing more than two-thirds of all British exports, the two counties enjoyed perpetual markets, for all clothes need replacing eventually.

Across the forges and machine-shops of the Black Country, Dickens recalled that "as far as the eye could see tall chimneys crowding on each other, poured out their plague of smoke." Along the Clyde the shapes of furnaces and foundries blotted out the hills. From the mines of Tyne and Tees, the Midlands and South Wales, came top-grade steam-coal to fire British-built boilers. From Birmingham came edge-tools, harness, bedsteads, trinkets; from the Potteries, Leeds, Sheffield, Nottingham, from a hundred shapeless sooty towns, the china, glass, cutlery, footwear, ornaments, that tempted the throngs in far-off bazaars with the vision of a new way of living. "With steam and the Bible the British traverse the globe."

And the imports, freed from all restrictions save moderate revenue-earning tariffs, came pouring in to the docks of London and Liverpool. Clogged and shawled Lancashire girls were now dependent for three-quarters of their raw cotton on the "peculiar institution" of slavery in the Southern United States: Yorkshire weavers relied on the sing-song chants of the wool-auctioneers 13,000 miles away in Sydney, where a squatter's clip – after his long fights against drought, wild dogs and land agents – would be bought in a split second by the movement of a hat or the waggle of a beard. Foodstuffs, too, like

grain and pork were beginning to come in.

Selling abroad had its setbacks. With China now open, "the heads of staid Lancashire manufacturers were turned by the prospect of 300 million customers waiting to buy their shirtings." China accepted the shirtings – on a modest scale, as it seemed, for her size: but she stopped short at more primitive British goods. A Sheffield firm shipped a huge batch of knives and forks to test the market, "declaring themselves ready to supply all China with cutlery." On the spot, however, gowned impassive merchants politely pointed out that the subjects of the Celestial Empire had abandoned such crude implements on becoming civilized; and for years Sheffield's finest products, fashioned into knick-knacks, were hawked round Hong Kong at knock-down prices.

But most other countries were greedy for the products of British factories. "High output, low cost" was the order of the day in Great Britain. It took its toll. "In the midst of plethoric plenty the people perish: amid gold walls and full barns no man feels safe or satisfied." This protest by the historian Thomas Carlyle, like the poet William Blake's rage against the dark satanic mills, marked the murkier aspect of the Other Empire's foundations. Low wages, long hours, child labour, slums – "abodes of men o'er which the smoke of unremitting fires hangs permanent" – these were the cost of the first phase of "God's diplomacy," of ploughing back profits relentlessly into expansion at home and development of markets overseas.

On May 1, 1851, when the Great Exhibition opened, doubts about the booming economy could be set aside. For here, in the most original and sumptuous of trade fairs, stood the embodiment of Free Trade's triumph. Here was enshrined Britain's lightning passage from the age of Soil and Sail to the era of Steam and Capital; from the closed trading estate to the open world market. Here she displayed everything her new productivity could offer, from tankards and carpets to machine-looms and hydraulic presses. Here she showed the welcome she now extended to the wares of other nations: to Tunisian dresses, Austrian musical-boxes, Indian jewellery; to the raw cottons, fleeces, jutes, oils, hides, that her manufacturing economy required. And beneath the glittering naves of glass designed by Sir Joseph Parton, Britain's capitalists, traders, workmen, and their foreign guests celebrated their country's dazzling success by consuming 900,000 Bath buns and over a million bottles of assorted soft drinks.

High output, low cost. It was the secret of the ever-steepening curve that was to multiply Britain's exports ten times over in the course of the 19th Century, from £58,000,000 to nearly £500,000,000; to increase her overseas investment of the surpluses from a mere £10,000,000 in 1816 to £700,000,000 in 1870. Yet even at the time of the Great Exhibition Britain was already importing more than she was exporting. In only three years between 1816 and 1913 did her sales abroad exceed her purchases. But her unfavourable trading balance was more than compensated in the sums earned by the services she was rendering to the world: and the greatest of these was shipping.

"The ships of the English swarm like flies," and by the middle of the 19th Century nearly all of them – like the racing tea clippers – were still wind-driven. But the lead Britain's technology had given her ashore was spreading to the seas. In 1847 the Clyde was building one-tenth of new British tonnage: a decade later it had a virtual monopoly. Iron hulls, screw propellers and improved engines were transforming plodding little coastal paddle-steamers into swift ocean-going giants. The be-funnelled brain-children of Isambard Kingdom Brunel, the liners of the driving, tight-lipped Samuel Cunard, were spanning the Atlantic. The lively Peninsula group added Oriental to their name by their scheduled mail services to Alexandria to connect with India. William Mackinnon's British India Steam Navigation Company was drawing its strands round the East.

The British merchant marine was the largest and most up to date afloat. Shipping agents everywhere were seeking the efficiency, regularity and lower rates offered beneath the Red Duster, the flag of the merchant navy; taking advantage of the insurance and brokerage services that went with it. The Other Empire was adding the high seas to its dominions.

So far, Britain's commerce with her colonies had never exceeded a third of her total trade. But now came the first signs of a change of emphasis. For at mid-century she was forging another instrument that was to extend her economic web across the world's land surfaces as her ships were stretching it across the seas. That instrument was the railway.

In the 1840s, inspired by engineers of the calibre of the Stephensons and by financiers of the flash of George Hudson, a vast quantity of national saving had been poured into railway-building all over the British Isles. By 1847, when the bubble of the mania burst at home, the railway fever was jumping the Channel, releasing across Belgium, France, and then more distant Europe, another tide of British energy. Even the Pope was assailed by British railway promoters; and in agreeing to the linking of the Papal States, he hastened the end of his temporal power.

Kings of this new field of endeavour were the big contractors: self-reliant stalwarts of enterprise whose names – Thomas Brassey, Mackenzie, Peto, Fox – became magic on the London Stock Exchange and on exchanges throughout the Continent. And to support the phalanxes of their beef-eating navvies working abroad, British industry massively increased its output of rails, locomotives, signalling equipment, rolling-stock. Soon, in the rush to build railways overseas, English directors were sitting on the boards of 19 French companies; and across the Atlantic the bulk of the shares in railroads like the New York and Erie, the Illinois Central, the Baltimore and Ohio, were English-owned.

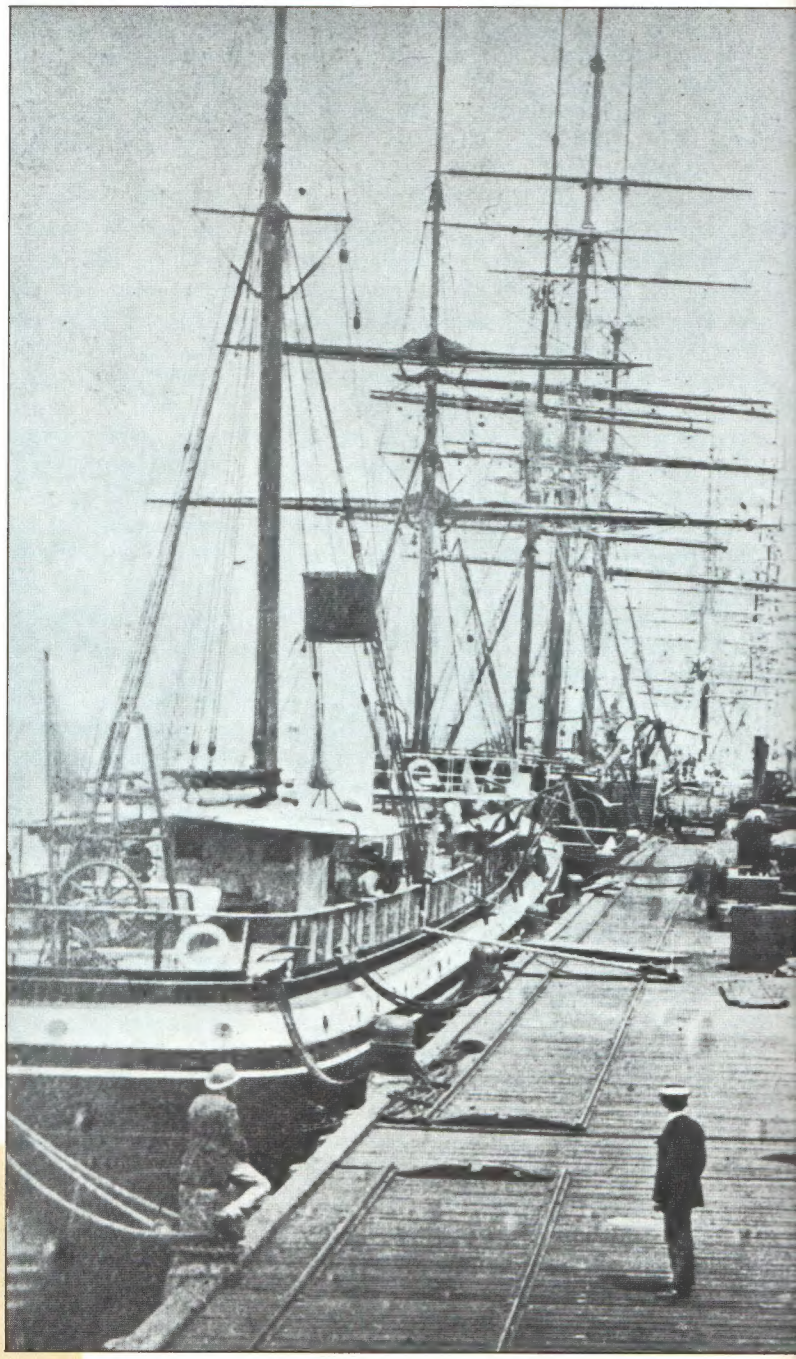
Amid the thunderous prospectuses of the fabled contractors, a little event passed almost unnoticed: the completion of a modest railway in the 1840s by the sugar-planters of Jamaica for their own use. Probably the first colonial line to be financed through the London stock market, it was significant. For if British-pioneered railways were a source of dividends in themselves, they could also serve another purpose. They could open up the further continents as sources of the raw materials Britain's growing industries required. It was this realization that first directed capital and skill on a major scale to the Queen's Empire.

THE RACING CLIPPERS

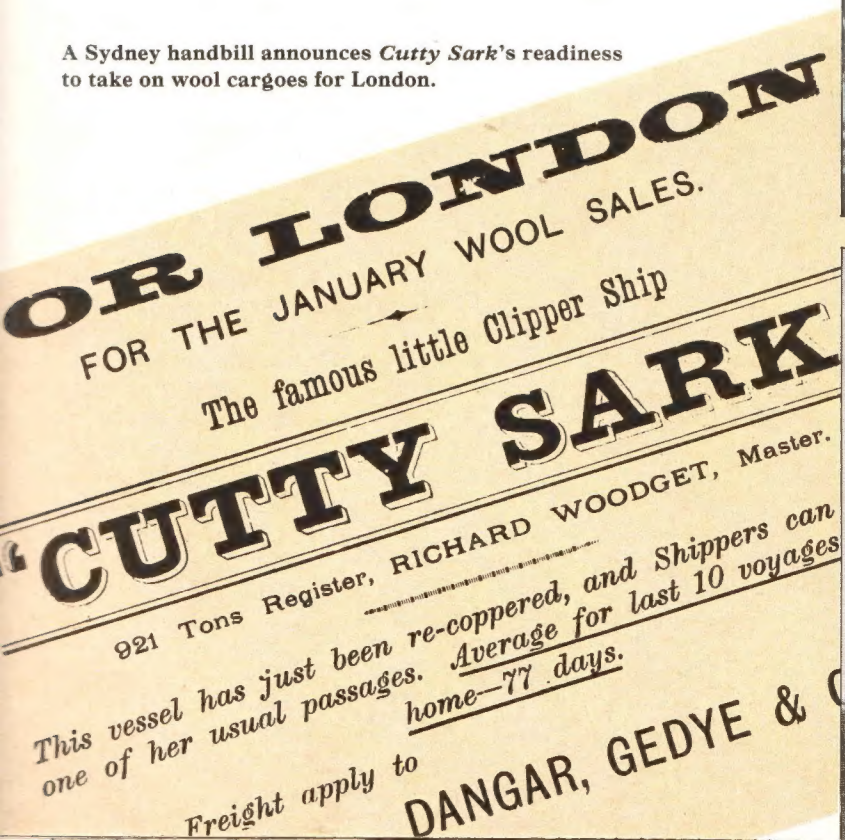
Before grimy steamers began supplying Britain with China tea and Australian wool in the 1890s, majestic clippers bore the chests and bales to the waiting nation. Among the China clippers there was a frantic annual race to London with the first picking of the tea-crop, for tea quickly deteriorated at sea and a fresh, fragrant cargo could fetch an extra ten shillings a ton.

The graceful vessels streaked across the Indian Ocean from Shanghai and Foochow like thoroughbred racehorses, attracting as much attention – and as many bets – as the Derby. The most famous of all these duels was fought out by the *Taeping* and *Ariel* in 1866, the *Taeping* winning by a short head after the two vessels had spent 99 days slicing through 14,000 miles of ocean. However, the *Cutty Sark*, the best known of all the clippers, never excelled in the tea races. It was on the Australia to England wool runs that she made her name, beating all comers through the foul Cape Horn passage.

Australian wool clippers at Melbourne, the principal wool port in the 1880s, are lined up to take on the season's clip, brought to the quays by rail from the sheep-stations.

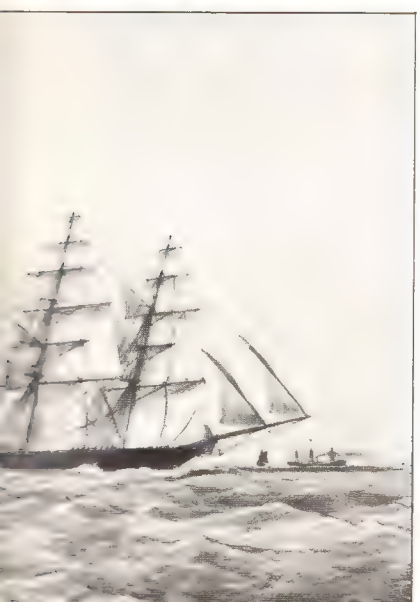


A Sydney handbill announces *Cutty Sark*'s readiness to take on wool cargoes for London.



Four members of a clipper's crew – the "iron men in wooden ships" – struggle on a bucking yard-arm to take in sail as raging seas burst over the heaving decks below.

As a victor in the tea race unloads at East India Dock, stevedores trundle chests of tea into a warehouse. For the winning ship's crew there was a £500 bonus and great public adulation.

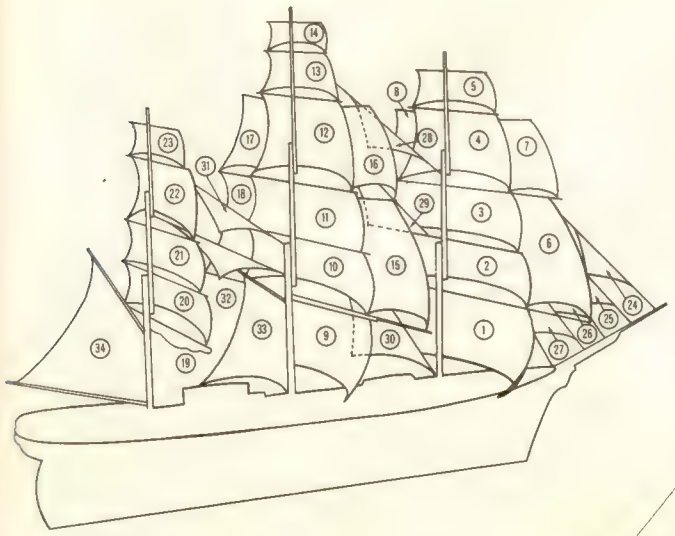


The clippers *Taeping* (left) and *Ariel* pound up the Channel during the great tea race of 1866.

Sleek Queen of the Seas

The *Cutty Sark* was launched at Dumbarton on the Clyde in 1869. Only 212 feet long, she was a small vessel by 19th-Century standards but her perfection of line made her one of the fastest sailing-ships the world has ever seen. Her copper-clad, teak hull, moulded sleekly over a wrought-iron framework – seen in the cutaway at right – carried more than 32,000 square feet of sail. Although the 921-ton clipper was capable of 17½ knots it took a captain of great skill and drive to squeeze the last knot out of her; lacking such a man for the first 16 years of her life she made only unspectacular runs.

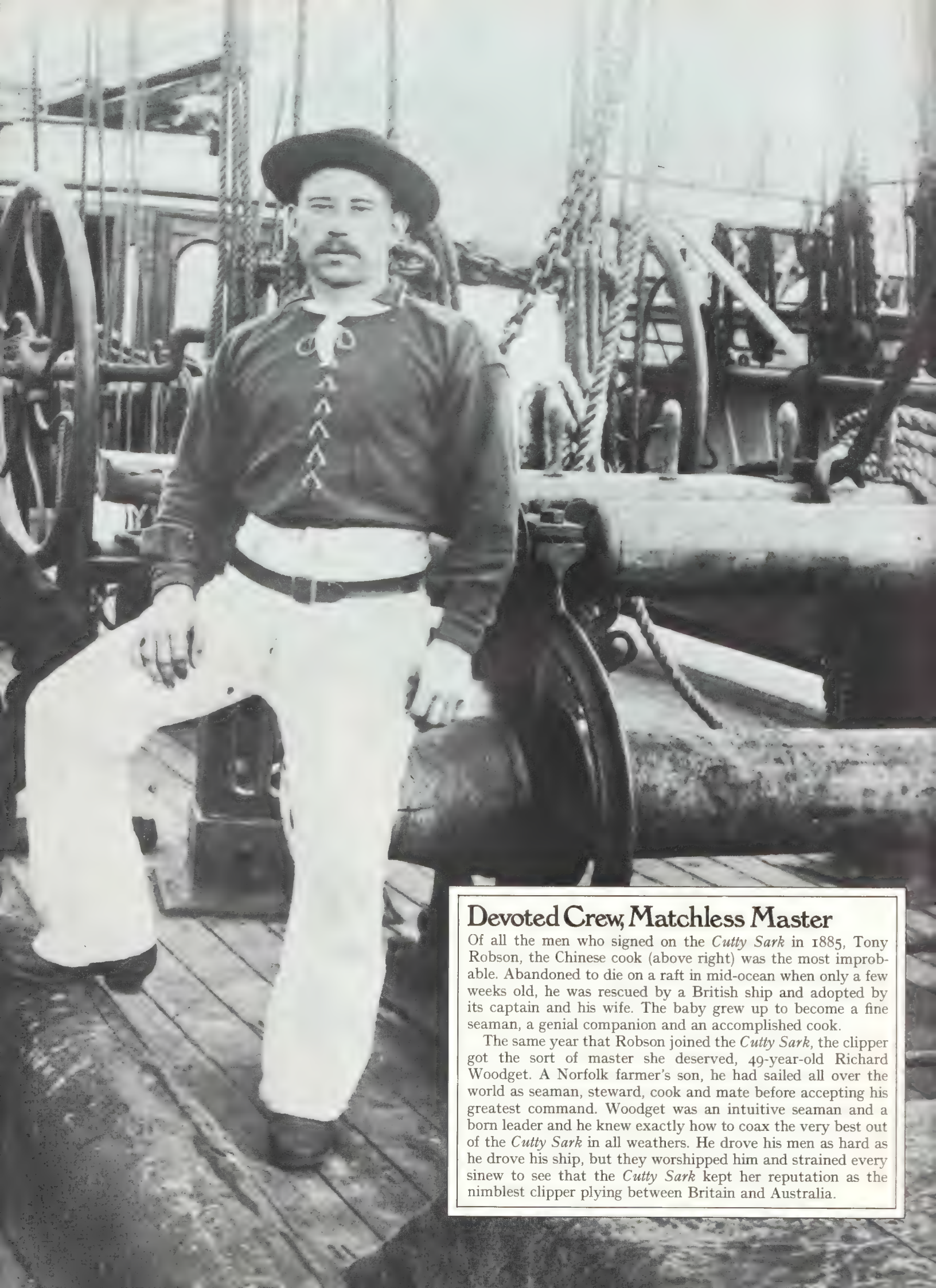
However when Captain Woodget assumed command in 1885, she began a long series of record-breaking voyages in the Australian wool trade, speeding home from Sydney in 77 days as against the 100 or so it took most of her rivals to do the trip. In 1895 the *Cutty Sark*, no longer able to compete against steamers, was sold to a Portuguese firm. For 27 years she roamed the seas as the *Ferreira* until Captain Wilfred Dowman of Falmouth bought the careworn vessel and restored her to her former glory. Today she stands in Greenwich, the sole surviving tea clipper and an eloquent testimony to a classic, though very short-lived, race of ships that graced the Golden Age of Sail.



Foremast: 1 Fore course. 2 Fore lower topsail. 3 Fore upper topsail. 4 Fore topgallant. 5 Fore royal. 6 Weather fore topmast stunsail. 7 Weather fore topgallant stunsail. 8 Lee fore topgallant stunsail. **Mainmast:** 9 Main course. 10 Main lower topsail. 11 Main upper topsail. 12 Main topgallant. 13 Main royal. 14 Main skysail. 15 Weather main topmast stunsail. 16 Weather main topgallant stunsail. 17 Lee main topgallant stunsail. 18 Lee main topmast stunsail. **Mizzen-mast:** 19 Crossjack. 20 Mizzen lower topsail. 21 Mizzen upper topsail. 22 Mizzen topgallant. 23 Mizzen royal. **Fore and Aft Sails:** 24 Flying jib. 25 Outer jib. 26 Inner jib. 27 Fore topmast staysail. 28 Main royal staysail. 29 Main topgallant staysail. 30 Main topmast staysail. 31 Mizzen topgallant staysail. 32 Mizzen topmast staysail. 33 Main spencer. 34 Spanker.

MAX MILLAR

Captain Woodget (above) was once seen by dockside visitors roller-skating round the deck of his ship, whose metal shirt emblem (below) nailed to the mainmast explained her name: a "cutty sark" is Scots for a skimpy cotton shift.



Devoted Crew, Matchless Master

Of all the men who signed on the *Cutty Sark* in 1885, Tony Robson, the Chinese cook (above right) was the most improbable. Abandoned to die on a raft in mid-ocean when only a few weeks old, he was rescued by a British ship and adopted by its captain and his wife. The baby grew up to become a fine seaman, a genial companion and an accomplished cook.

The same year that Robson joined the *Cutty Sark*, the clipper got the sort of master she deserved, 49-year-old Richard Woodget. A Norfolk farmer's son, he had sailed all over the world as seaman, steward, cook and mate before accepting his greatest command. Woodget was an intuitive seaman and a born leader and he knew exactly how to coax the very best out of the *Cutty Sark* in all weathers. He drove his men as hard as he drove his ship, but they worshipped him and strained every sinew to see that the *Cutty Sark* kept her reputation as the nimblest clipper plying between Britain and Australia.

The *Cutty Sark* enjoyed the proudest moment of her life on July 26, 1889, when she swept past the P. & O. steamer *Britannia* off eastern Australia. The crack mail ship had overtaken the clipper on the previous day, but with a freshening wind the *Cutty Sark* caught her up off Sydney and stormed past at 17 knots. The clipper had been anchored for a full hour in Sydney Harbour when the *Britannia* steamed in, her passengers and crew lining the rails to give the remarkable sailing-ship a resounding cheer.

II. Discovering the Empire

In India, though it still continued to trade there, the East India Company's monopoly had ended in 1813. The passing of its grip had not been regretted by the newer business community: "Its very name so stinks in the nostrils," the *Manchester Examiner* had roared, "that no prospect of gain is sufficient to tempt enterprise within its borders." Since then, independent commerce had increased until India held first place in the trade of the British possessions. Coffee and indigo had expanded. The mills of Dundee had abandoned Russian hemp in favour of Indian jute. Tea-planting, encouraged by the palate of the British worker, had begun to expand in earnest.

In at least one respect the *Examiner*'s onslaught had been justified. Under the old régime little had been done for transport: the East India Company and the bullock-cart had gone hand in hand. Merchants and planters were now demanding improvement; and Manchester, anxious for an alternative source of cotton in case of a slave rebellion in the United States, was adding its powerful voice. The meetings to urge action grew more numerous, the exhortatory speeches longer: but little happened until James Andrew Brown Ramsay, tenth Earl of Dalhousie, was appointed Governor-General in 1848.

Dalhousie had been President of the Board of Trade. He understood the vital role of communications in developing economies; and he quickly became the most dynamic of India's rulers since Warren Hastings. Under him the Ganges Canal and the Grand Trunk Road strode to completion, telegraph-lines began their march between the cities. But his main aim was a network of railways across the great sub-continent; and in April, 1853, he drafted a famous paper. "Great tracts are teeming with produce they cannot dispose of," he wrote. Moreover, railways in India "would enable the Government to bring its military strength to bear" in days rather than months.

Scarcely had the first lines been tentatively laid when the Mutiny broke out – and proved Dalhousie triumphantly right. At a moment of dire crisis the few hundred miles of new railways speeded reinforcements from Calcutta and brought relief to a few scattered commands.

But the Mutiny did much more. Its outcome convinced British investors that the Raj was there to stay. And it fired their imaginations with that compound of good intention and commercial hope that frequently guided their choice of securities. Free Trade had already shown itself a promoter of peace through prosperity. Here was an opportunity to apply that beneficent aim to an imperial domain. A great transport infra-structure in India would pacify and civilize – and yield rewards to all concerned.

Dalhousie wanted his railways: but he did not want the Indian government to build them. It would be better done by private enterprise – with the supervision necessary to prevent a mania like that which had swept Britain a decade earlier. Accordingly, to attract capital he offered a 5 per cent government guarantee on Indian railway stocks, while simultaneously imposing government control of plans and routes. Some 50,000 British savers took up the offer. But the control in India proved inexpert: too many railways spread across the dusty plains, and unprofitable lines fell back on the guarantee.

The experiment thus both failed and succeeded. Stockholders, thankful for their 5 per cent, did not ask by whom it was so regularly produced. In fact, the golden egg came from the Indian taxpayer – who for years to come faced a drain of interest payments without receiving goods or services in return. Manchester, moreover, never got its cotton. The quality remained too poor; and the Indian administration, fearing for law and order, refused to allow the changes in traditional cultivation methods that Lancashire urged. But the Indian railway system – to this day one of the finest in the world – paid other dividends. It reduced the impact of famines, started the welding of diverse societies into a nation, brought that nation into the world market. By the 1870s, £150,000,000 of new British capital was at work in Indian industry and commerce.

The Empire of the Queen and the Empire of Trade and Capital were beginning to draw together. Both had their seats of power in London. The centre of the former lay at Westminster. The hub of the Other Empire – the "Informal Empire" as some called it – was the City. And by now the City of London was the richest city of the richest country in the Western world.

It was a sunless smoky square mile at the heart of the metropolis, loud with the clop of hoofs and pungent with the smell of horse-dung. Its narrow streets and alleys – Eastcheap, Cornhill, Mincing Lane, St. Mary Axe, Old Jewry – lay squat beneath the soaring fingers of Wren's steeples, clustered in a crowded patternless huddle round the Old Lady of Threadneedle Street.

It was a hive of pale clerks on high stools, bent over massive ledgers in counting-rooms where gaslights hissed during the day. It was a maze of paper indited in flowing Victorian copperplate – bills, bonds, certificates – circulating in the pouches of top-hatted brass-buttoned messengers. It was a rendezvous for all in search of cash or credit: ministers of foreign governments, agents of British colonies, directors of companies from every continent. It was a smooth-running, almost unfathomably intricate machine for buying and selling money.

In carved and panelled offices, on a nod and a quiet word, the great merchant-banking houses clinched their loans to foreign countries. Hambro's specializing in Italian issues; Frühling and Goschen's in Egyptian; Morgan's in Chilean; Schroeder's in Peruvian; Raphael's in Hungarian, Baring's competing with Rothschild's for the honour – and profit – of financing the Tsar; Oppenheim's, Bamberger's, Bischofheim's – all lending to governments eager for progress and without inordinate concern for their taxpayers. Advancing the funds for public buildings and stately boulevards, for street lighting and mains water, irrigation and sewerage; for armaments and the symbols of prestige; for – who cared, given adequate security – the greasing of political palms in distant city halls.

Behind drab facades finance companies opened accounts for all who wanted to purchase shares, undertaking on behalf of the small man and woman "such operations as an experienced capitalist might effect with a capital of millions."

Investment firms baited their prospectuses to attract the growing public who now had money to spare: aristocrats, professional men, successful shopkeepers, prudent widows; the affluent with thousands behind them, the careful with a few pounds put by. One such company might promote debentures. to enable the great Brassey to build a railway in the Danubian Principalities. Another might assure its depositors that it could "ally the demand of India for capital at ten per cent with the English demand for investment at four or five." Cheques from comfortable bank balances, sovereigns from socks beneath the bed: money for railways, harbours, bridges, for factories and plant, for sober certainties and glittering gambles.

At the street corners pennies were held out for the papers that trumpeted the opportunities of the moment: the *Financier*, the *Money Market Review*, the *Bullionist*, the *Bondholder's Register*. There was a hot sale for the *Railway News*, backed by the fabled James McHenry who was himself engaged in the acrobatic feat of building a railway in America without contributing a penny of his own money. And it was said to have been a financial journalist – Frederick Greenwood of the *Pall Mall Gazette* – who, at one of the celebrated daily luncheons given by the Rothschilds, first suggested that Disraeli would do well to buy for Britain the Suez Canal shares owned by the bankrupt Khedive of Egypt. It was an idea that was to net Rothschild's a commission of over £250,000 in return for finding four millions overnight.

Close by, shipowners and their superintendents passed in and out of Lloyd's, arbiter of ocean traffic, with its individual underwriters sharing the risks on vessels and cargoes traversing the Seven Seas, with its minutely informed agents in every major port, its signal-stations running up their bunting on the headlands. In the halls of the Livery Companies – wealthy fraternities of Goldsmiths, Fishmongers, Mercers, Vintners, descending from the trade guilds of the Middle Ages – stewards and toastmasters oversaw the setting out of plate and table-linen and glass, many-branching candlesticks of solid silver, rich-wrought golden loving-cups, embossed illuminated menus, for gargantuan banquets.

And all the time the Stock Exchange ticked over in its shadowy dimness, reacting like a barometer to the fluctuating pressures of world trade.

The ablest note of the Foreign Secretary, it was said, spoke with feeble force compared with a Stock Exchange list. Here the two Empires overlapped. Some prominent City men belonged to both, alternating directorships with ministerial posts as governments rose and fell. Banking firms often had more partners in the House of Commons than on the Court of the Bank of England. Yet between Westminster and the City a chilly gulf was fixed. Repeatedly, officials in Whitehall penned austere minutes; "H.M.G. do not feel justified in seeking the sanction of Parliament to adopt coercive measures." Although Palmerston's growls might once have backed up British merchants on the spot, now Lombard Street could look after itself.

The City was adventurous, optimistic, young in spirit. It said "Yes" almost as often as "No." However unknown and tongue-tied you might be, if your proposals to expand an Indian tea-property made sense, if you could prove your Uruguayan mining concession genuine, sooner or later you would find someone in the City to listen. British capital moved quickly, freely, boldly. And once put up, it stayed put up – patiently awaiting its reward, often through thick and thin. Governments might default, land companies overreach themselves, railroads go bankrupt, booms and crises alternate. Swings and roundabouts: the City was constantly renewing itself, absorbing the losses or passing them on, reinvesting the profits in a new scheme.

Above all, London reflected the brash go-getting confidence of the Midlands and the North: of the manufacturers, contractors, merchants, shippers, men of rough tongue and hard head, who were clothing the continents, setting them on rolling wheels, creating new needs and desires in populations from the Ganges to the Plate. And this confidence it passed on, heightened and strengthened, to that new Lord of Creation, the British investor. In the 20 years from 1860 on, the City was able to coax from the British public some £320,000,000 in loans to foreign governments, £480,000,000 for India and other Empire countries, £230,000,000 for companies engaged in engineering works abroad, additional millions to swell the capital of wholly foreign concerns.

In effect, the dingy square mile hugging the north bank of the Thames was collecting Britain's savings and channelling a large part overseas – there to build a world in Britain's image, materially and mentally equipped to trade with her.

Then, in the 1870s, the whole structure of Britain's overseas economy began to change. Hitherto, except in India, the Empire of Westminster and the Empire of the City had had but a nodding acquaintance with each other. But development in India had paved the way for a new interest in the British possessions as a whole. Now, the two Empires were increasingly to merge.

For Britain, the 1870s were a time of reckoning. It was the moment of realization that by financing other energetic countries, by exporting to them her manufacturing know-how, she had been building up competition for herself. The younger industries of Germany and America, formerly eager markets for British capital goods, were now equipping themselves. The factories of France and Belgium were getting under way; India, Brazil, Japan, often with the help of British machinery and expertise, were beginning to clothe themselves. Britain's markets were under attack. She must find new ones, redouble her export efforts.

It was the moment, too, when the underlying effects of the Industrial Revolution became starkly apparent at home. The point of balance between industry and agriculture had finally been passed. The urban population, and its expectations, had been steadily rising. Till recently, however, Britain had still grown four-fifths of her own food. But suddenly, within a few years, that proportion dropped to scarcely a half. Home farming, faced with larger imports of cereals, meat and wool, had cut back on the old staples and was specializing instead on perishables like milk and vegetables. Yet the population was still rising by 10 per cent a year. Henceforth Britain

would need greatly increased supplies of food for her workforce, similar increases in raw materials to step up her exports against the accelerating competition. These imports, and the new markets to pay for them, could only come from the opening up of hitherto virgin areas.

America, though her eastern seaboard was already industrialized, had not yet filled her inner spaces. Nor had Argentina. Equally important, there was a huge untapped potential within the British Empire proper: in Canada, Australia, New Zealand, Africa, the Far East.

The dawning of these new perspectives coincided with a crisis in the City. Unstable foreign governments, especially in Latin America, were defaulting on their loans, suspending interest payments. A Parliamentary committee, set up to investigate, revealed a fetid London money-market: there had been too many doubtful loan transactions, too many fat commissions. By the end of 1873 Bank Rate was hovering at a minimum of 9 per cent. A recession in stock prices was reacting back on industry and commerce.

With such worries piling up, it seemed to the British investor that the wide open spaces were a healthier field for his money – and especially the spaces of the temperate latitudes where white populations had been settling. Colonists of British and European stock were hard-working, responsible. True, earlier in the century their countries had been but frontier territories, fluid and risky: but now they were becoming stable and experienced nations. Investment in them would help forward kith and kin. It would ensure Britain's own future. It would yield a surer return.

Events conspired to heighten the attractions of the "areas of recent settlement." The opening of the Suez Canal in 1869 had suddenly brought Australia closer to the British Isles. Diamonds had just been discovered in South Africa. In New Zealand Julius Vogel, gold-prospector turned journalist turned statesman, was advancing his far-reaching schemes for investment in industry. The Canadian Pacific Railway, bravely surmounting desperate financial odds, was opening the prairies to cultivation, piercing the Rockies, making federal union a reality for British Columbia.

As the dust of the City's crisis settled an entirely new picture became clear. British capital was leaving its old haunts in Europe and elsewhere, and was heading out to develop the far-flung plains and valleys of the Queen's Empire, of the American West, of the Argentine. And with it flowed a fresh tide of emigration; of trained, skilled, enterprising people confident of prosperity ahead. Simultaneously, British industry began to find the new markets it urgently needed. The last 30 years of the century saw a second giant boom in railway-building as new lines drove into the interior of new continents. And along them, with the immigrants, went the infinite range of hardware required to start whole new economies, most of it made in Britain and shipped in British bottoms: structural steel and galvanized iron, intricate mechanical equipment for mines, telegraph-line and submarine cable, tubes for artesian bores, agricultural machinery, mile on mile of fencing for fields and ranches, as well as a myriad of domestic articles to ease life under new skies.

So, as the yields of food and materials from overseas began to mount, an Empire of Trade and Capital came into being of which, at length, Victoria's Empire formed a major part.

It was the empire of Poet Laureate John Masefield's dirty British coaster butting down-Channel with the humdrum wares of Birmingham; of Rudyard Kipling's big steamers bringing back the eggs, apples and cheese. Of the plough-teams criss-crossing the prairies as they turned the black soil. and the elevators of the wheat co-operatives rearing their gaunt frames above shunting-yards and flat horizons. Of the boundary-riders ranging the Australian outback beneath the shimmering gum trees, and the crack of a stock-whip across boundless stations owned by wealthy grazing families and served by ubiquitous firms of specialized agent-brokers. Of the green carpets of sheep-dotted pasture spreading down from New Zealand's Tararua Range to the Pacific; the long mountains of yellow slag rising round Johannesburg above the pay-streaks of the Rand; the sarong-girded labourers cupping the latex in the deep shade of Malayan rubber groves and the jets of high-pressure hoses gouging out the tin-rich deposits. Of British banks and credit-houses shuttling from the tropics to the snows the paper of a trading world based on the unquestioned solidity of the pound sterling.

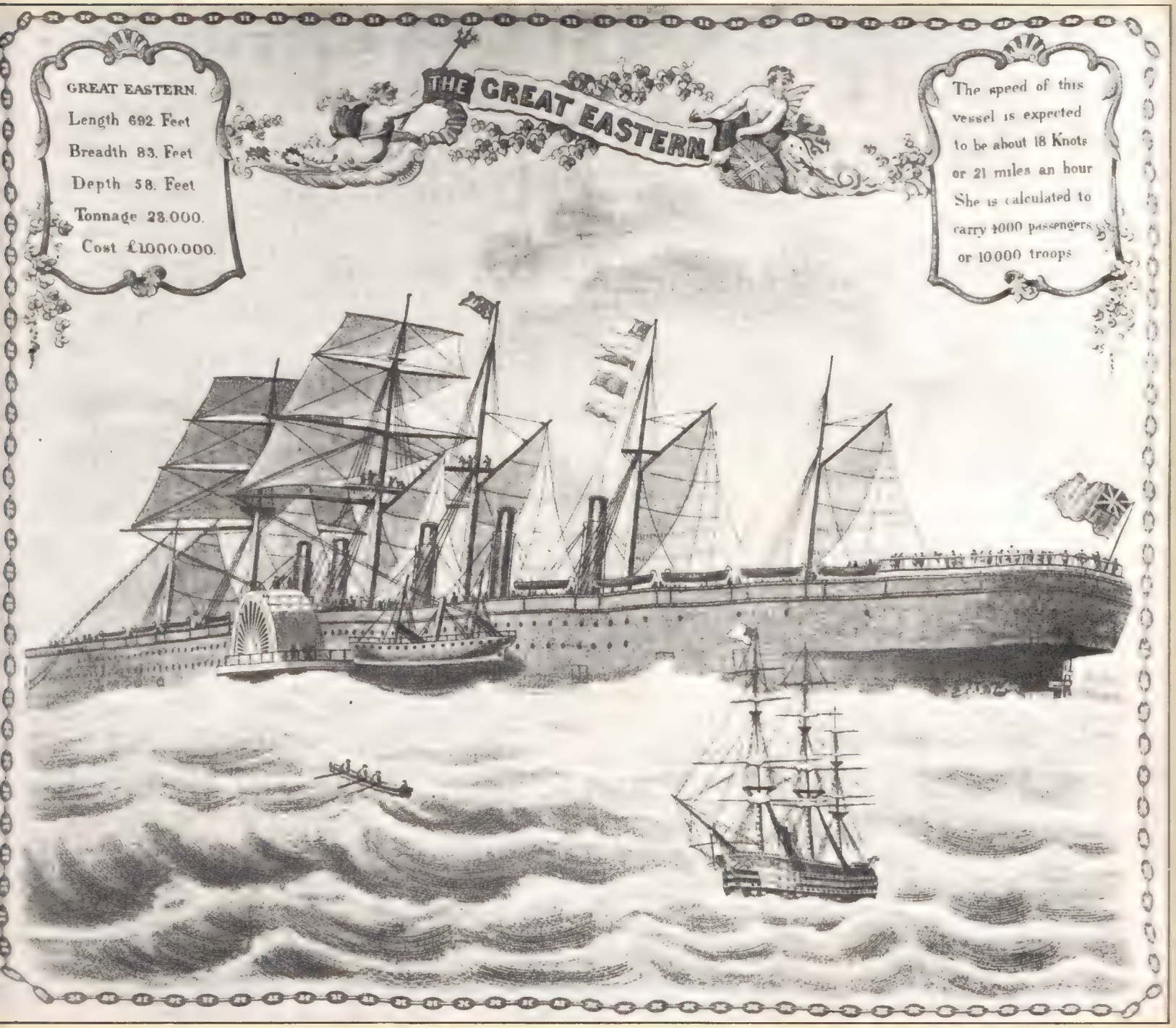
It was a productive, extractive, creative, empire. But the great shift of capital, the new quest for materials and markets, had its uglier aspect. In Africa, the last decades of the century were marked by the scramble of the European nations to acquire colonies in the shape of native territories. It was, at root, an economic scramble. "Colonies," declared a French minister in 1885, "are for rich countries one of the most lucrative methods of investing capital."

To Britain, as the leading imperial power, it seemed impossible to stand aside. But the British government would not itself face the responsibility or the cost. Instead, a long-dead practice was revived: that of granting total privileges to chartered companies; of allowing, in effect, profit-seeking businessmen to usurp the functions hitherto reserved to government officials. Accordingly, agents of powerful financial groups penetrated the African interior, negotiating treaties with unsuspecting and usually illiterate native chiefs. By these treaties all rights to develop vast tracts of land were handed over, often in return for trivial gifts.

In this way Sir George Taubman Goldie's Royal Niger Company acquired its control over some 300 native-ruled areas in West Africa; and the Imperial British East Africa Company of Sir William Mackinnon, Chairman of the great British India steamship line, came into possession of a realm of 200,000 square miles and four million Africans. But the most notorious was the British South Africa Company of Cecil Rhodes. Appropriating lands described as "the pick of central Africa on both sides of the Zambezi," buying out rival mining concerns, fighting off Boer resentment and native hostility, Rhodes made what was probably the greatest fortune ever amassed in imperial adventure. It was a time of triumph for economic freebooters.

THE GREAT EASTERN

The giant iron steamship *Great Eastern* excited more national pride than any other ship in British history. Depicted on everything from tea-cloths (below) to tapestries, it was confidently expected she would proclaim the excellence of Victorian engineering and Britain's mastery of the seas. But the monster that the British took so lovingly to their hearts proved a bitter disappointment. The sluggish and ill-starred vessel beggared its owners and killed its designer, Isambard Kingdom Brunel. She proved successful only as a cable-layer and ended life ignominiously as a floating amusement arcade on the Mersey.

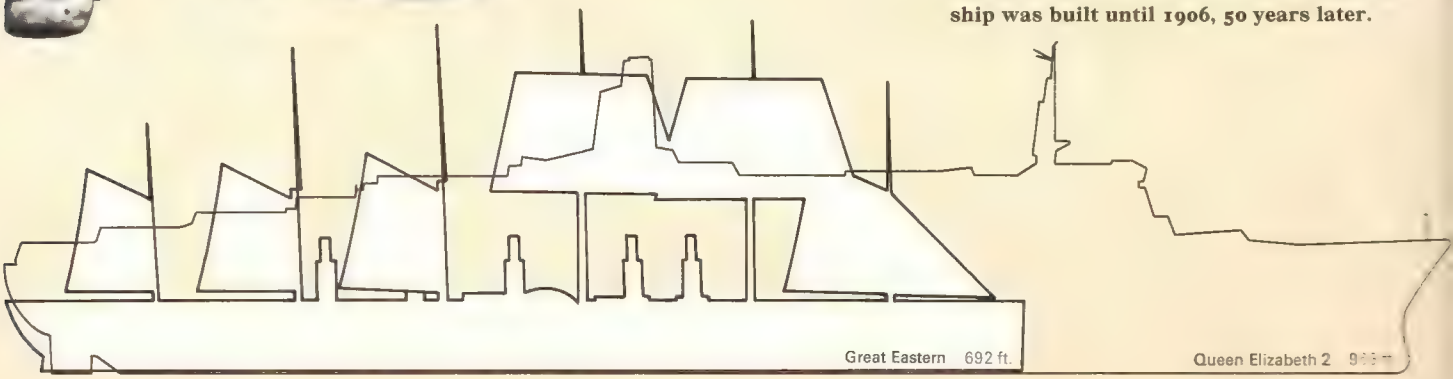


The *Great Eastern*'s sails and engines were supposed to drive her along at 18 knots – a speed she never attained.

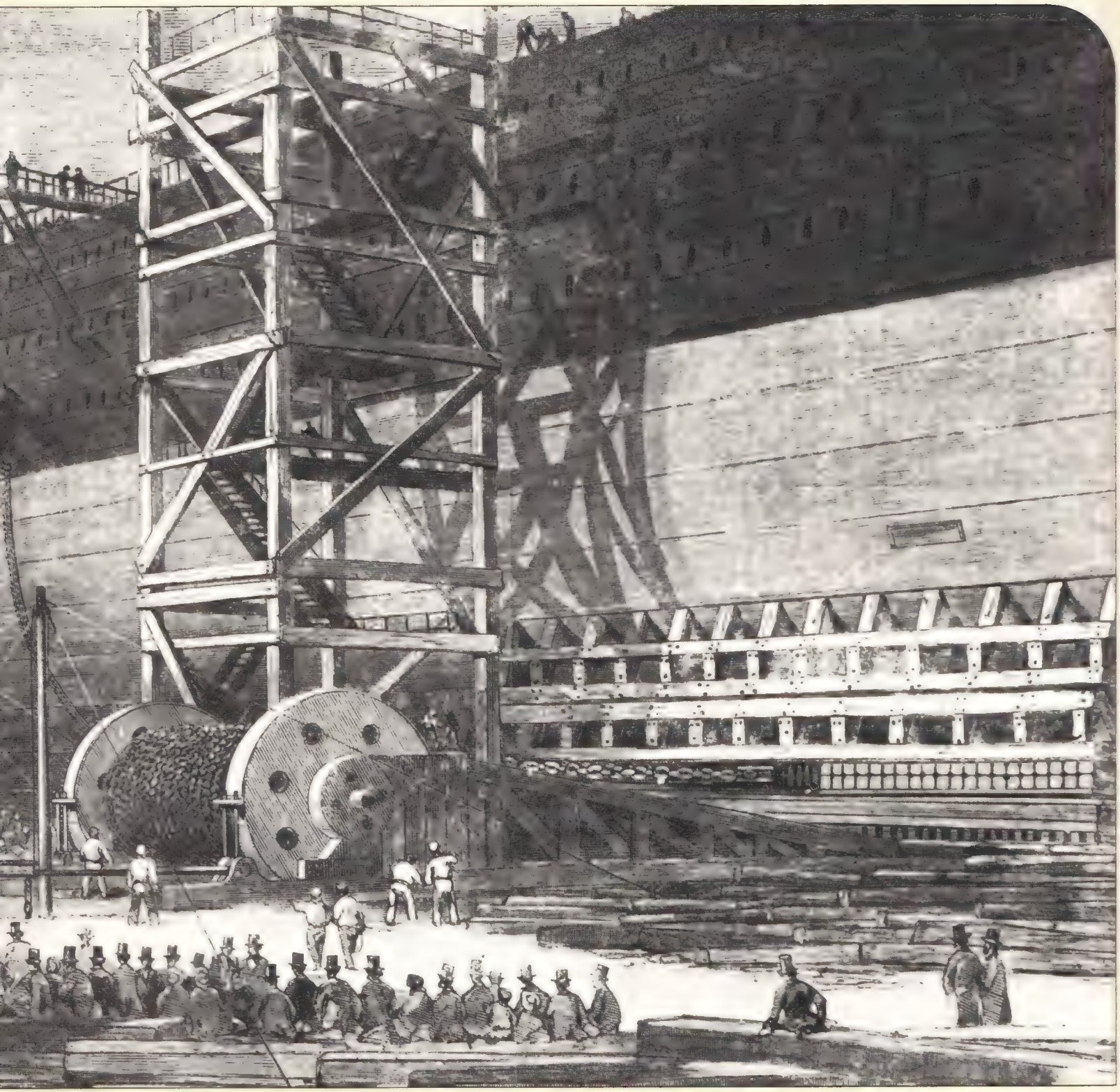
A team of navvies tug on the *Great Eastern*'s stern windlass to check her descent to the riv

Brunel, designer of the *Great Eastern*, chewed cigars and wrote himself innumerable memos that he stowed in his top hat.

The 18,915-ton *Great Eastern*, ancestor of today's liners, may look small alongside the 65,863-ton *Queen Elizabeth 2*, but no larger ship was built until 1906, 50 years later.



during the official launching. Seconds later the windlass jammed in an accident and the launch was abandoned.



Launching the Reluctant Leviathan

The *Great Eastern* was the brainchild of Isambard Kingdom Brunel, one of the most brilliant engineers of the 19th Century. He had completed the Great Western Railway and built two famous steamships, *Great Western* and *Great Britain*, when he began work in 1854 on his "wonder of the seas" at Millwall, then a London suburb.

As the *Great Eastern* rose above the Thames river-bank, she became the biggest tourist attraction in Europe. Ragged East Enders jostled with awestruck foreign royalty to catch a glimpse of the towering vessel and the 2,000 ant-like workers who swarmed over her hull.

By October, 1857, the leviathan was ready for launching. But as she was almost as wide as the Thames itself she had to be nudged into the river sideways. Brunel had built her on mobile cradles and as the day of the launching approached he amassed hydraulic presses, steam-winches, and tugs to propel her over 330 feet of mud into the tideway. On November 3, 100,000 people thronged the shipyard to watch the vessel launched.

But as she slid towards the water, the great ship snapped up the slack of chain on the stern windlass, jerking huge braking handlebars into the air and killing two labourers. The ship promptly ground to a halt and the launching was abandoned. "There she lies on the very bank of the noble river which is to convey her to the ocean," observed an astounded *Times*, "but she will not wet her lips." However, Brunel, tired and ill with overwork, refused to be daunted. For two months, he supervised the work that inched the ship towards the river. Finally, on January 31, 1858, to the pealing of London's bells, the *Great Eastern* conceded defeat and slid grudgingly over the last few feet of mud into the water.

The intermediate section of the *Great Eastern*'s paddle-shaft was, at the time it was made, by far the largest forging ever produced. It weighed 40 tons and needed a special furnace to fabricate it and an enormous derrick to lower it into its position deep within the bowels of the ship.

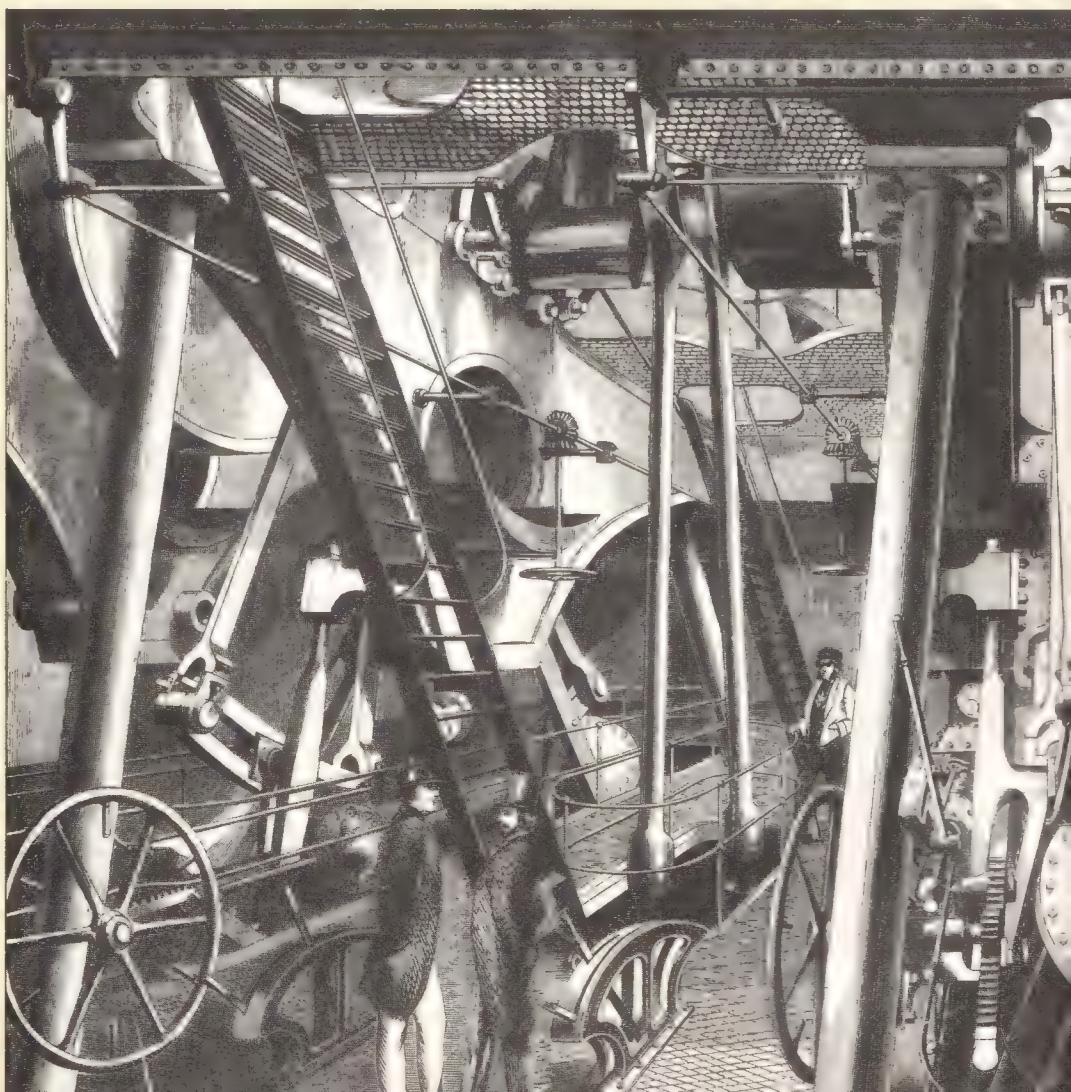
A Crippling Impotence

One thing seemed certain about the *Great Eastern*, she was enormously powerful. Brunel had taken the unprecedented step of fitting her with two engines, one to drive a 24-foot propeller, the other to power two 58-foot paddlewheels.

The public thrilled to newspaper accounts of these humming masses of machinery with their huge cylinders, measuring over six feet in diameter, served by a row of boilers. Everybody expected the *Great Eastern* to fly effortlessly and speedily across the sea.

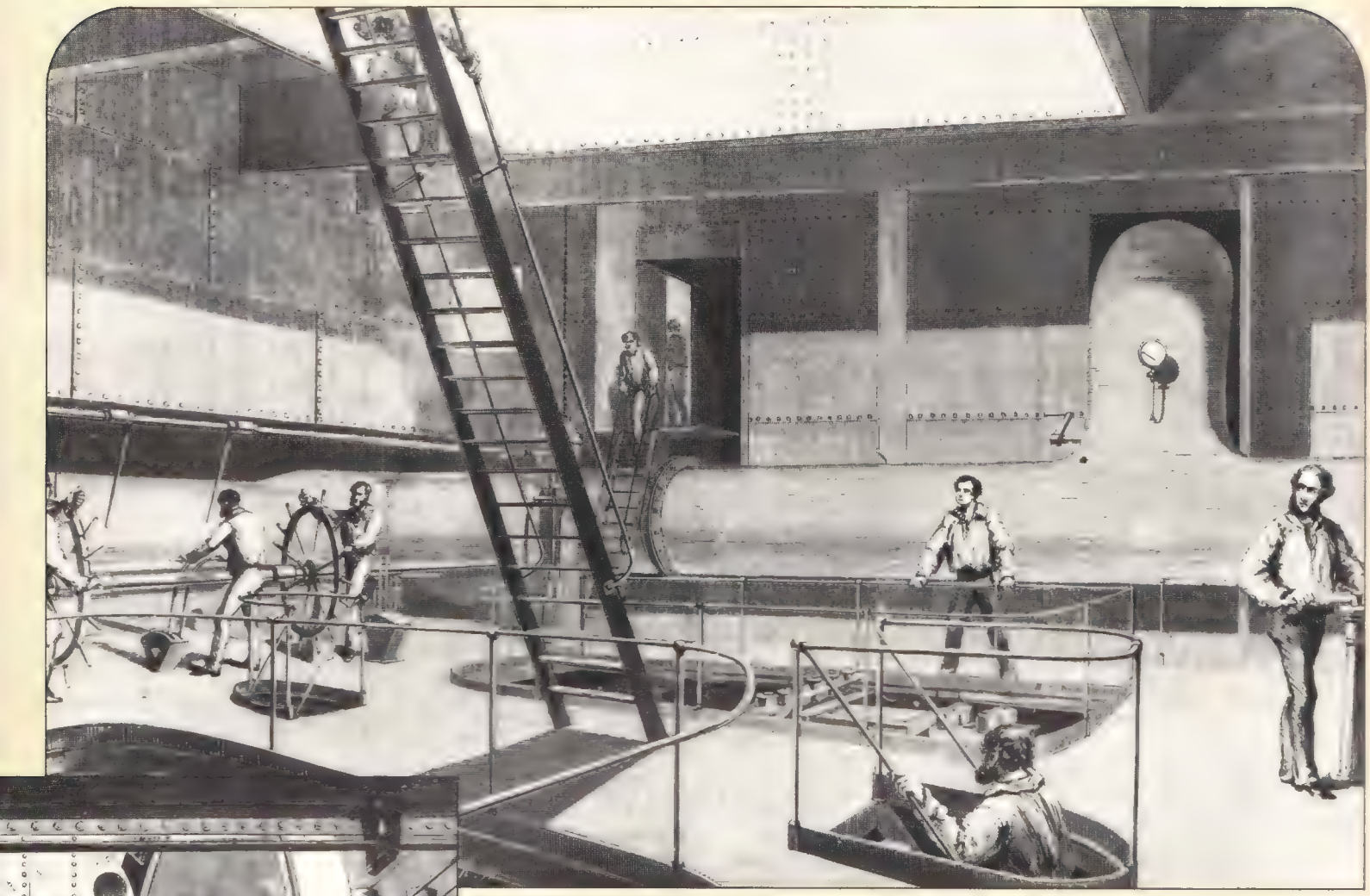
But the ship that seemed so powerful was in reality pitifully underpowered. Never in her entire career did she summon up more than 5,000 of a potential 11,000 horse power, and despite hopes that she would cruise at 18 knots, 15 was all she ever achieved.

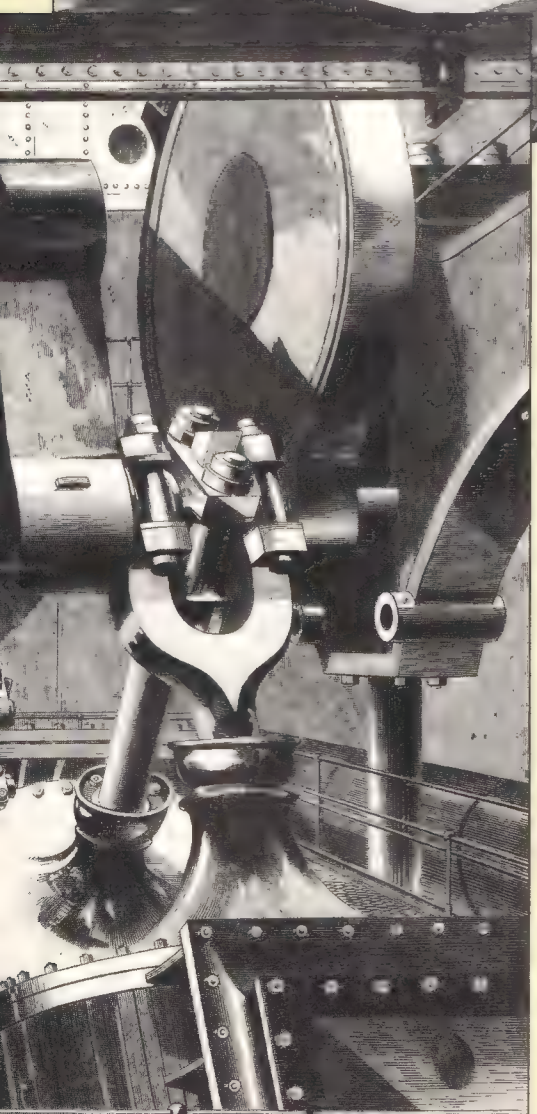
The *Great Eastern*'s engines were undoubtedly a considerable engineering achievement but their lack of power effectively crippled the ship. As time passed it became clear that Brunel had built an ocean liner long before the technology existed to operate one.

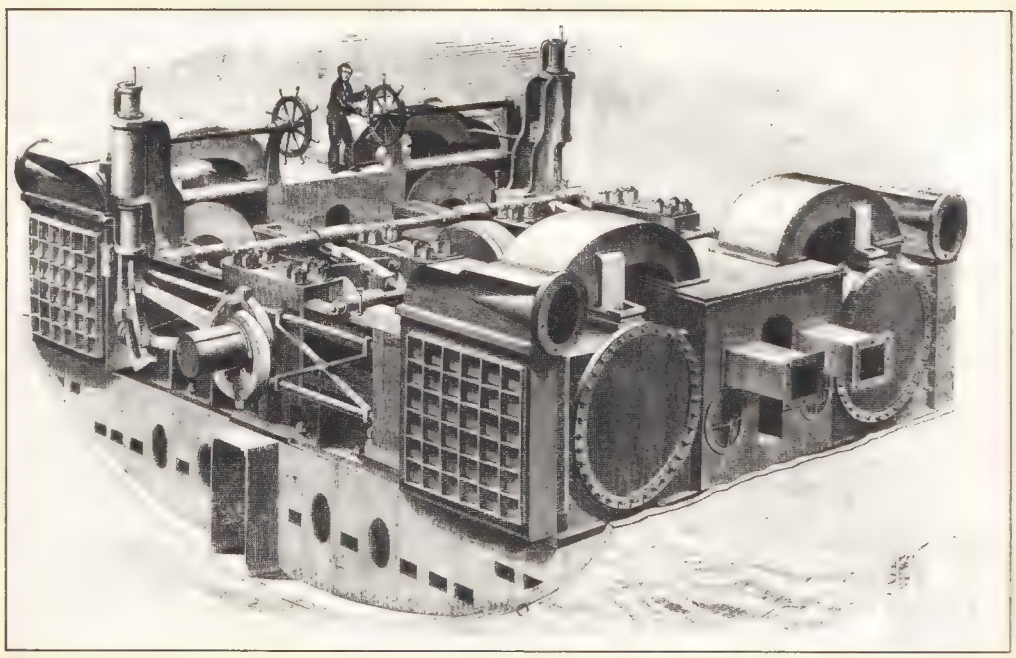


The *Great Eastern*'s paddle-engines ran so quietly that even when they were driven at top speed engineers standing close by found they could talk in perfectly normal voices.

The compartment housing the screw-engines had two sections. Here, in the upper section, a sailor on the left is about to spin a wheel to put the *Great Eastern*'s propeller into reverse.







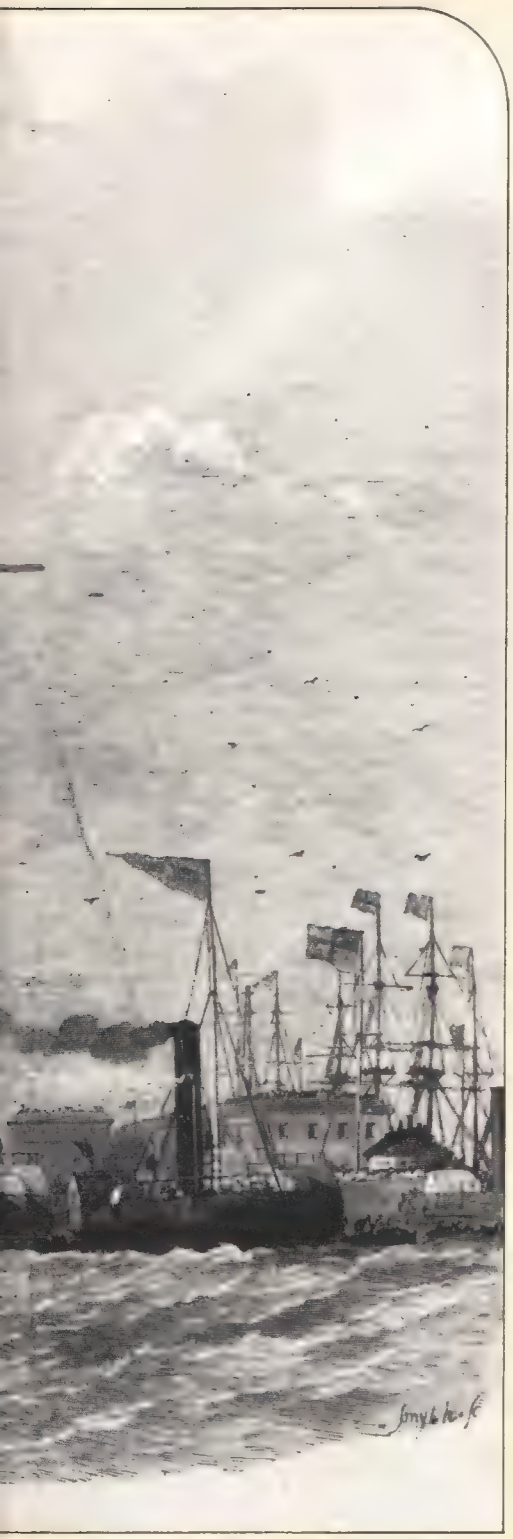
The *Great Eastern*'s screw-engines, seen here in section, had the herculean task of spinning the ship's 36-ton cast-iron propeller and its 60-ton shaft. Unless used together with the paddle-wheels, the screw could only push the vessel along at a disappointing nine knots.

New Yorkers poured on to the *Great Eastern* at a dollar a head when she docked at a timber wharf in the Hudson River after completing her maiden trans-Atlantic voyage.

The Unluckiest Ship in the World

Once the *Great Eastern* was afloat, Brunel began fitting her out with masts and staterooms in preparation for what he hoped would be the first of many voyages to Australia. But he was a grievously sick man and on the day before she sailed on her trials he suffered a stroke. Mercifully, he was dead before the ship's owners announced that she was to be used not for the lucrative Australian trade, where the only competition was provided by sailing-ships, but to cross the Atlantic.

On the North Atlantic run she faced fierce opposition from a host of steamers that had virtually cornered the Atlantic freight and passenger traffic. She left on her maiden voyage in June, 1860, with only a handful of her 4,000 berths occupied. Despite a delirious reception in New York, only 100 passengers booked for the return trip. Then in September, 1861, – when she was carrying many more passengers than usual – she steamed into a terrifying Atlantic storm and lost both paddle-wheels in mountainous seas before limping back to Cork. It was clear that the luckless vessel had failed and in 1864 she was sold for a derisory £25,000 to Cyrus Field, an American magnate, who packed her off to lay cables in the sea.



A clutch of tugs ease the *Great Eastern* through a hazardous section of the Thames at Blackwall as the brand-new ship sets out on her trials in the English Channel.

The Grand Saloon, where passengers could relax on red velvet sofas or stroll over deep-pile maroon carpets, was supported by silver pillars and lavishly decorated in white and gold.

Passengers in the Grand Saloon were flung from side to side with the furniture when the *Great Eastern* ran into a hurricane in 1861, and rolled to a horrifying 45 degrees – "as if rocks were shifted to and fro by an angry surf," remarked a bruised survivor.

"How are the Mighty fallen!"

In Field's hands the *Great Eastern* underwent a merciless refit. Cabins and boilers were torn out to accommodate the 2,300 miles of Atlantic cable and the sumptuous Grand Saloon, stripped of its splendid furnishings, was converted into a vast, echoing cable tank.

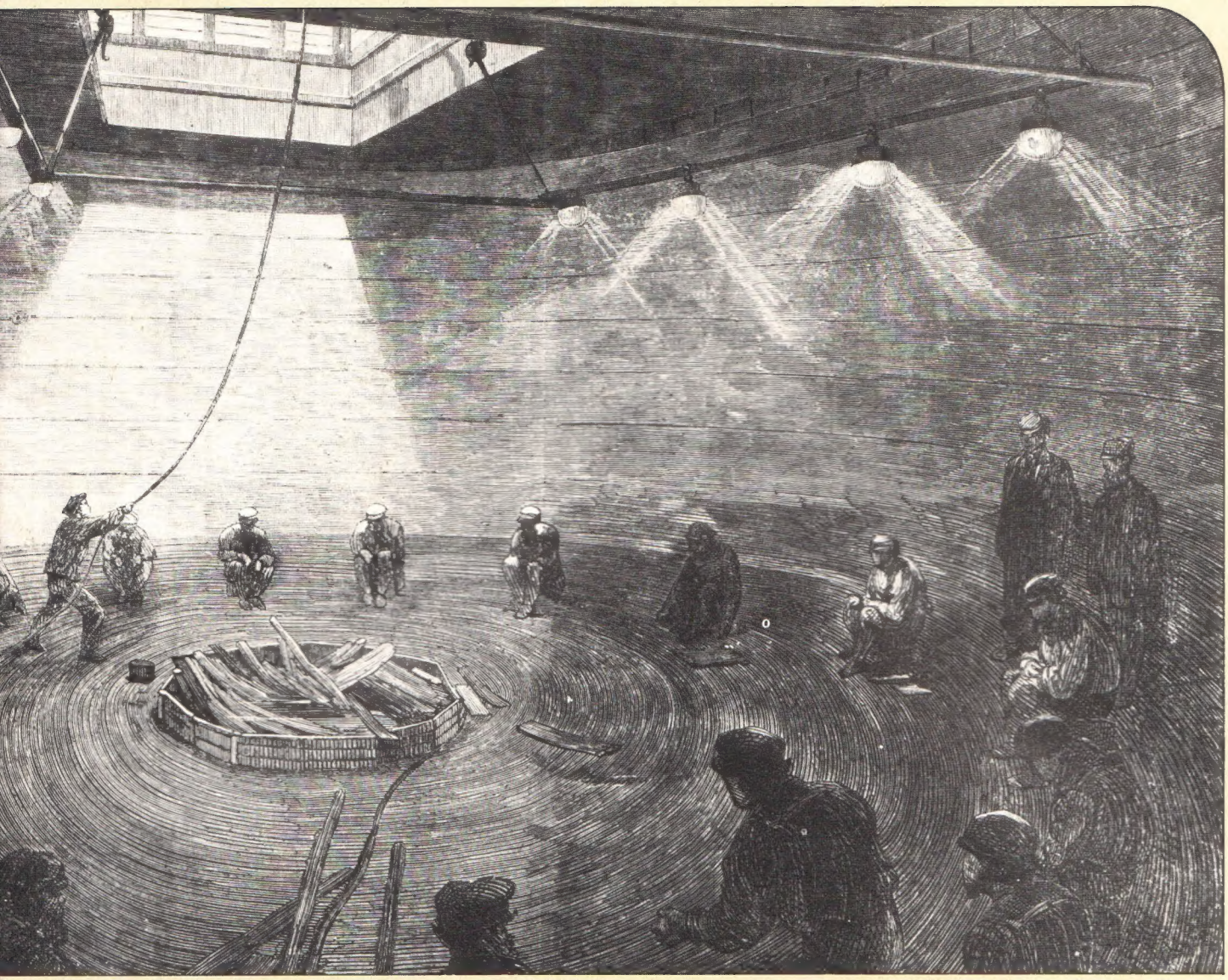
In 1865 the great ship steamed off towards Newfoundland, paying out cable as she went. Almost at once a galvanometer began to detect faults in the cable's protective sheathing; miles of cable had to be hauled up, faulty sections cut out and new ones spliced in. It was laborious and heartbreaking work. But worse was to come. In mid-Atlantic the cable suddenly broke in two and plunged three miles to the sea-bed.

Despite this abortive mission, the *Great Eastern* was back in the Atlantic on the identical task the following year and successfully laid a cable to Newfoundland. At last the great ship seemed to have found fulfilment. In 1869 she sailed to India to lay the Bombay to Aden cable. But in 1884 the advent of custom-built cable ships rendered her obsolete and for the next 12 years she gathered rust in Milford Haven.

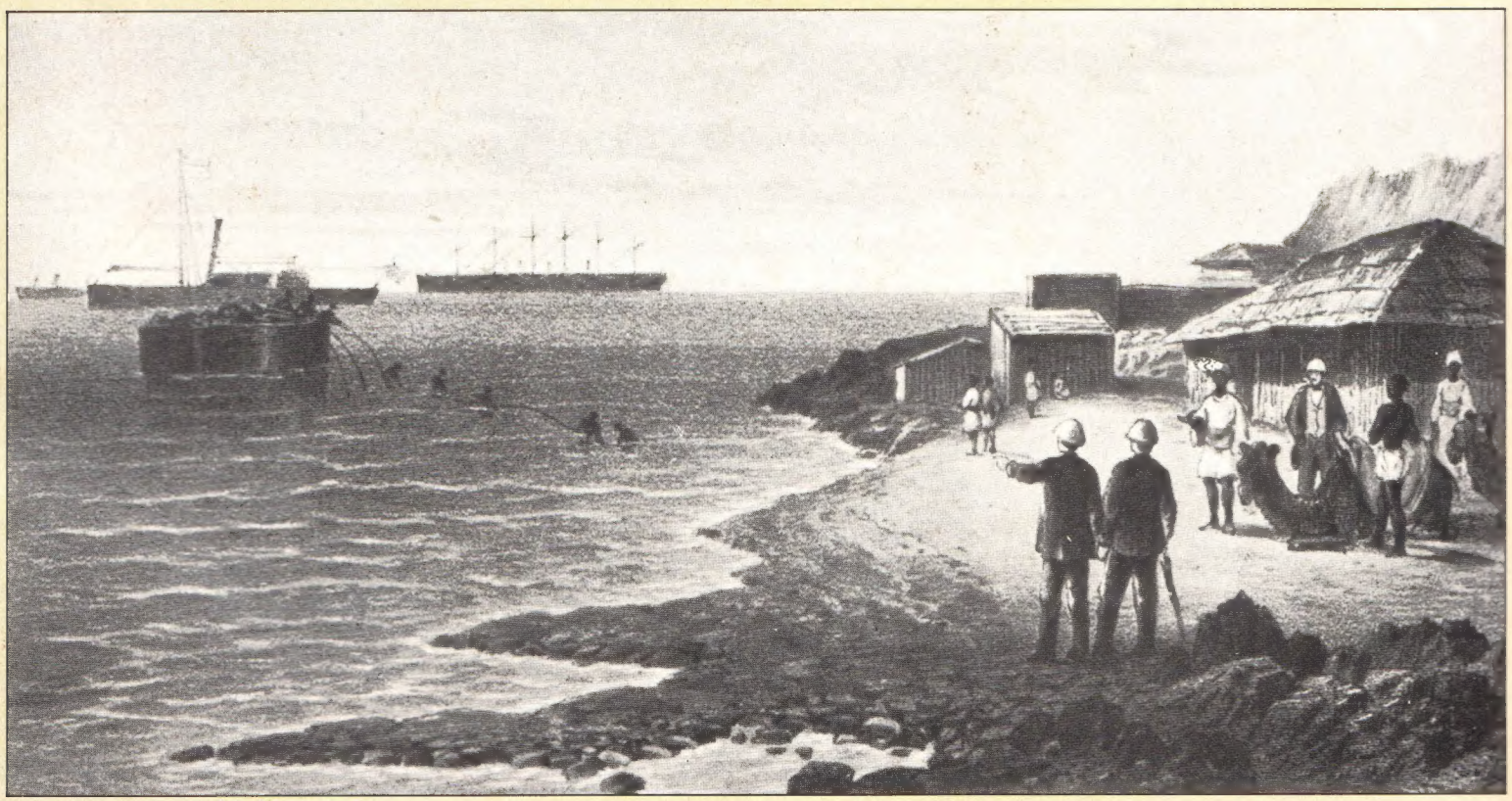
In 1886 insult was heaped upon injury when she was transferred to Liverpool, daubed with slogans for Lewis's department store and opened as a floating funfair, complete with cheap bars and tawdry restaurants. "What a contrast," wrote a visitor who had seen her on her maiden voyage. "Then she was in full bloom and a vessel of great expectations. . . . Now she is a mammoth advertisement. How are the mighty fallen!"

Two years later the *Great Eastern* was broken up. In her hapless career, she had squandered a million pounds of her owners' money to become the greatest white elephant in maritime history.

Great Eastern **technicians recoil in horror as the Atlantic cable snaps and shoots into the sea. When attempts to raise it with grapnels had failed, the ship sailed for home.**



In the half-light of the *Great Eastern*'s forward cable tank, men coil the wire that was to link the Old World with the New.



The *Great Eastern* lies off Aden's volcanic shores after laying the ocean telegraph from Bombay in 1870. In the foreground Arab workmen land the cable from a barge on the last stage of its journey to the telegraph office.

III. The Competition Stiffens

By the eve of the Great War the extent of British world trade and investment was far vaster than it had been 50 years before, and entirely different in its pattern. Some £4,000,000,000 of British capital was at work overseas. Of this, no less than £2,000,000,000 – one-half – was invested in the Empire proper: while of the other half, £1,500,000,000 was lodged in the Americas. Only about £500,000,000 remained in Europe and elsewhere. Since 1896 the total value of British exports had surged up by 120 per cent. To Canada they had increased fourfold, to Australia threefold, to New Zealand and India they had doubled. And as she was supreme among the trading nations, so too was she on the seas between them: Britain owned nearly half the world's tonnage, carried half its goods, was building more ships than the rest of the world together.

Through the bustle of the commodity exchanges, the roar of the furnaces, the yelping of the tugs along the swinging cranes, it was possible to trace a series of unguided yet strangely logical steps by which she had climbed to this peak of her economic power. She had first generated surpluses through the productivity created by her industrial pioneers and through her lucky position in the Napoleonic Wars. She had launched and multiplied her overseas trade by investing these surpluses in the countries – mainly in Europe and America – which then offered adequate safety and reward. At a critical point in her destiny she had shifted the bulk of her ever-swelling capital and resources to the support of the newer countries – most of them within her own imperial domains – whose now maturing energy could meet her changing, growing needs.

But the Great War – by its sudden demand for wholesale diversion of effort and the massive repatriation of capital – only served to mark a definitive point in a process which was already under way: the erosion of Britain's dominance.

She had equipped much of the world for the Industrial Age. And its leading nations, now in fierce competition with her, were protectionist in trend. Despite the calls for tariff reform led by the crusader for Imperial Preference, Joseph Chamberlain – he lambasted his critics for denying that "a system accepted in 1846 could possibly require modification in 1903" – Britain remained true to her Free Trade principles. But she was finding it more difficult to keep old customers and obtain new ones.

If Free Trade had worked Britain's economic miracle, it was in some respects beginning to work against her. Before her rivals began to catch up with her, she had enjoyed easy markets abroad; and in some fields of manufacture this had not been conducive to a constant search for improvement in quality and performance. The onset of competition highlighted the resulting failures wherever they occurred in her industrial system: conventional design, slipshod workmanship, late delivery. She was still living by her traditional exports: textiles, railways, "classical" engineering products, coal.

But a second Industrial Revolution was in the making: demand was rising for electrical equipment, scientific instruments, chemicals, artificial fabrics. In these she lagged behind – and even found her home market invaded by new lines she could well have turned out herself. In 1907, 65,000 automobiles were running on British roads: 53,000 of them were of foreign make.

Moreover, the main lines of world trade were altering, becoming disparate. Trade between Brazil, Argentina and the U.S.A. was rising. India was evolving her own connections in the East. Australia was shopping around. German and Italian immigrants in Canada preferred consumer goods imported from their old homes. Japan was creating a commercial network in the Pacific. Trade was no longer running along a few established routes, mostly radiating to and from Britain. It was weaving a series of regional skeins: and those skeins were becoming interlocked in a complex multilateral web that was more difficult to dominate from a single point. When war broke out British control was passing.

The sins of Britain's Other Empire during its heyday are still hurled against its memory. It is held that, at home, it created a *rentier* class which, typified by Galsworthy's Forsyte family, lived on the fruits of investments and came to identify the national and imperial interest with its own; and that by the same token it excluded the vast majority of the British people from a share in the country's growing wealth. It is said that, overseas, it extinguished valued traditional patterns of livelihood in the older possessions like India, and imposed upon the newer lands specialized unbalanced economies; that it favoured the more experienced white countries of the world and did little for the less; and that in its latter phase it shamelessly disregarded native interests – an opinion which was powerfully developed by Lenin in his attack on economic imperialism.

In all such accusations there is truth: but in calmer retrospect other factors emerge. Nothing like Britain's building of a global system of trade and capital lay within the world's previous experience. The sheer scale and dynamism involved were unique; and perhaps the only comparable achievement since has been the take-off of the American economy – which, in its earlier phases, was directly catalysed by Britain. In creating the first universal economic order Britain herself was inexperienced, working pragmatically from the only cardinal rule the leaders of the nascent Other Empire knew: the hope of gain.

Rigging, killing and cornering of markets in pursuit of that hope certainly occurred. But in the main the dividends came from fixed-interest securities rather than from shares. Few got rich quickly; it took time to reap the benefits of securities offering a steady 5 per cent. It was their continuity and their constant reinvestment, rather than their size, that swells the compound total. And for the greater part of the 19th Century the management of British trade and money was the reverse of imperialistic. It was cosmopolitan rather than national. It willingly admitted others to its enterprises, if only to share the risk; and though in the long run it took much, it was often on the side of small business and of liberal régimes.

In its century of dominance, the Other British Empire – with its passionate belief in *laissez-faire*, Free Trade, open competition – laid the economic foundations and raised the physical infrastructure of the free world of today, and of part of the Communist world as well. But it is arguable that had the inevitable industrialization of the world been launched by other doctrines and by other hands, it might well have been more artificial, more disruptive – and on balance undertaken with far less humanity.

Officer, 6th Dragoon Guards (Carabiniers), 1832

IN NEXT WEEK'S ISSUE

BUCKETS OF DIAMONDS
PRECIOUS PEBBLES OF KIMBERLEY